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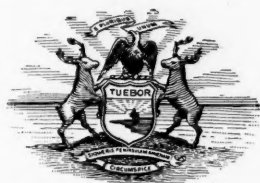
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TUBERCULOSIS PROCLAMATION.

The people of the State of Michigan always have been subject to the ravages of tuberculosis, a wholly preventable disease. This disease is the common enemy of mankind, and is rightly called the White Plague. The first manifestations of tuberculosis are frequently overlooked. The patient discovers his danger when it is too late. The Medical Fraternity of Michigan have it in their power to render the State an invaluable service. Their functions are to relieve suffering, cure disease and prevent disease and the greatest of these three is to prevent disease. Michigan physicians are ready to encourage and practice this form of patriotism—the patriotism of saving their fellowmen from this awful scourge. I suggest that on Friday, August the twentieth, any person in Michigan desiring a medical examination whereby he may ascertain whether he has any of the symptoms of tuberculosis, may have such examination and advice by asking a physician for it.

Therefore, I, Woodbridge N. Ferris, Governor of the State of Michigan, do hereby designate Friday, August the twentieth, A. D. 1915, as Tuberculosis Day, at which time all physicians engaged in the practice of medicine are requested to render this service without charge.

Original Articles

PREVENTION METHODS.

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"Though the mills of God grind slowly,
Yet they grind exceedingly small,
Though with patience he stands waiting,
With exactness grinds he all."

—Longfellow

Inasmuch as the contagiousness of tuberculosis was recognized by various men throughout the Middle Ages and in 1865 Villeman demonstrated by experiments on animals that tuberculosis can be transmitted from one individual to another, is it not remarkable that when Robert Koch, in 1882, announced his discovery of the tubercle bacillus as the specific cause of tuberculosis a campaign was not at once inaugurated for elimination of this disease? As Tennyson says, however, "Knowledge comes but wisdom lingers," and it is only in comparatively recent years that the world seems to have awakened to the fact that tuberculosis can be prevented by the application of the same principles of sanitation that have been so successfully employed against typhoid fever, plague, malaria, yellow fever, hydrophobia, typhus fever, smallpox and leprosy.

There can be no tuberculosis without tubercle bacilli; the prevention of tuberculosis means the prevention of infection.

The Michigan State Board of Health was organized in 1872 at which time the death rate from tuberculosis in the state was about one hundred sixty per 100,000 population. Long before the discovery of the tubercle bacillus Dr. Henry B. Baker, who for over thirty years was Secretary of the State Board of Health, emphasized the communicability of this disease. As early as 1880 Dr. Henry F. Lister of Detroit, a member of the Board, wrote as follows: "The weight of medical opinion founded upon intelligent observation inclines to a belief in the contagiousness of phthisis." The Michigan State Board of Health was I believe the first one in this country to officially declare tuberculosis to be dangerous to the public health and to make it a reportable disease. This action was taken in 1893. At this time a campaign of education in the state was inaugurated and in the next ten years the death rate from tuberculosis in Michigan dropped to 99.2 per hundred thousand population.

For several years a number of prominent

medical men in the state, among whom were Drs. H. B. Baker, V. C. Vaughan, E. L. Shurly, J. H. Kellogg and H. J. Hartz, petitioned each succeeding legislature for an appropriation for a tuberculosis sanatorium in the state. In 1905 these efforts were crowned with success and in the fall of 1907 the Michigan State Sanatorium was opened three miles from Howell.

In March, 1905 on the invitation of Mr. S. H. Ranck, Librarian of the Ryerson Library of Grand Rapids, who had recently come from Baltimore where he had taken part in the organization in 1904 of the National Association for the Study and Prevention of Tuberculosis, Dr. V. C. Vaughan delivered an address on Tuberculosis in Grand Rapids at which time the local Anti-Tuberculosis Society was organized. The Detroit Society was organized in January of the same year. During the succeeding ten years the death rate from tuberculosis in Grand Rapids underwent a remarkable diminution, namely, from one hundred thirty-five per hundred thousand population for the three year period 1902-3-4 to seventy-nine and nine-tenths per hundred thousand population for the year 1914. During this same period the decline in the death rate in the entire state was from 99.6 per hundred thousand population to 89.4 per hundred thousand.

In April 1907, six months before the opening of the State Sanatorium at Howell and almost a year before the Detroit Sanatorium was opened, Grand Rapids opened its first sanatorium for the treatment of pulmonary tuberculosis.

In the present stage of civilization tuberculosis must be looked upon as the great social disease of modern life. Every third death during the working period of life is caused by it. Every other working man who becomes incapacitated must ascribe his condition to it. The only way to prevent it is to keep people from coming in contact with open cases. Seventy per cent. of all afflicted can be traced to previous cases. But, tuberculosis is so widespread that the co-operation of the state with political and social institutions as well as with private citizens is necessary in combating the disease.

As Pannwitz stated at the Sixth International Congress of Tuberculosis: "If the fight is to be taken up all along the line and an effective warfare waged against tuberculosis, as a national disease, it must not be allowed to depend upon the accident of some rich man

occasionally being willing to furnish the sinews of war. The fight is so many sided and requires so much capital that it far exceeds the resources of a single individual or even of private associations. We must find broader shoulders to support the load. The duty of carrying on this warfare at the present day rests logically with municipal governments."

Ten years ago in an address before the State Medical Society at Petoskey, the writer stated that "Here then is a disease which is constantly with us, manifestly preventable, and which at one time or another attacks a large proportion of the human race, concerning which the state has shown a neglect of sanitary laws that is almost criminal; and the question of the hour is: "What is the State of Michigan, and the various cities and counties within its borders, going to do about it?" The State of Michigan has finally made a splendid beginning in doing its part in the campaign by appropriating one hundred thousand dollars for the use of the State Board of Health in making a survey of the state for the purpose of locating the open cases and educating the people in methods of preventing contagion. For a good many years Michigan has been far in advance of most other states in its low death rate from this disease. In fact this state seems to constitute a great natural sanatorium for tuberculosis. A further reduction of mortality can confidently be expected, and it is not too much to hope that "The State of Michigan girdled with its zone of inland seas may be the first great community in all the world to realize the sanitarian's prophetic vision of the final extermination of the Great White Plague."

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS FROM THE STANDPOINT OF THE GENERAL PRACTITIONERS.

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The education of the public with regard to the subject of tuberculosis has at once simplified and rendered more difficult the task of the physician, with regard to the recognition of this disease. No longer do people demand a definite answer with regard to the presence or absence of early tuberculosis at the first visit. They are conversant with the insidious character of its onset and recognize that careful observations on several occasions are necessary in

order to arrive at definite conclusions in the earliest cases. On the other hand, the public does demand that such early diagnosis be made, and it has become justly intolerant of diagnoses of chronic bronchitis, asthma, etc. in which the etiological factor is shrouded in obscurity.

In the examination of an individual for the presence or absence of possible tuberculous disease, the previous history is of great importance. Careful inquiry should be made with regard to intimate association over a prolonged period of time with any individual suffering with chronic cough, whether a member of the family or not. The physician who asks only with regard to family history, will in many instances not only fail to uncover the source of infection, but may be led to attribute undue importance to tuberculous disease in a relative. Thus a family history of tuberculosis occurring in a married sister who contracted the disease from her husband and with whom the patient has had no association since the development of the trouble, is of little significance, whereas a history of close association with a tuberculous room-mate, may prove of vital importance as a possible source of infection.

In connection with the personal history, it may be stated at the outset that as a rule, cases of pulmonary hemorrhage, fistula in ano, and pleurisy associated with fever, whether dry or accompanied with the presence of serous exudate, in individuals under forty years of age, indicate active tuberculous lesions at the time at which these disorders were manifest. Attacks of so-called pneumonia not distinctly lobar in type, and especially if repeated, should be looked on with suspicion, as also should a history of repeated, prolonged attacks of "grippe." In children particular significance should be attached to a history of long-standing bronchitis, following measles. Chronic bronchitis, asthma and bronchiectasis should always demand careful investigation, and the physician who neglects repeated and searching tests for the possible presence of tubercle bacillus in the sputum of cases, is not doing his full duty to his patient.

The tubercle bacillus thrives best within the living body and finds conditions unfavorable to its growth in the external world. For this reason it is not to the advantage of this organism to destroy its host since in that way it deprives itself of its own abiding place. Therefore it has adapted itself to living as nearly as possible in harmony with the body of its victim, and produces the minimum amount of bodily reac-

tion. The onset of the disease is therefore gradual, slow and stealthy and the earliest symptoms consist of slight deviations from the normal, which moreover are for the greater part quantitative rather than qualitative in type. This statement might well lead to a pessimistic attitude on the part of the general practitioner were it not for the fact that the most important deviations are found in those bodily phenomena such as temperatures and pulse, which lend themselves easily to accurate observation. Thus the daily extremes of body temperature in connection with active pulmonary tuberculosis usually correspond in time to the extremes of temperature in the normal individual, the minimum being reached in the early morning hours and the maximum temperature occurring in the late afternoon or early evening. However, the temperature of the tuberculous individual displays the instability associated with a febrile state rather than the stability characteristic of the normal. Thus, while the normal temperature may vary from one to one and a half degrees, Fahrenheit, within twenty-four hours, the tuberculous daily fluctuation is notably greater, being distinctly subnormal in the morning and hypernormal in the afternoon and evening. A temperature of above 99.2° F. when constantly recurring and associated with a subnormal morning temperature indicating a wider fluctuation than normal should be regarded as suspicious, in the absence of any apparent cause. An insurance director once made the statement that given an accurate observation of temperature on each of three successive days, between the hours of 3 and 8 p. m. and excluding all risks that showed a temperature of 99.4° or above at each examination he would reduce the subsequent mortality from tuberculosis to a greater extent than through the employment of the most careful physical examination. It should also be borne in mind that an individual may become accustomed to a febrile temperature particularly when constantly recurring. Thus it is not unusual to find moderately advanced cases registering 100 degrees F. or above, who state that they do not feel feverish at the time of examination. The temperature of the actively tuberculous individual rises as a result of either physical or mental exertion as does that of the normal person but this is out of all proportion to the exertion made and is maintained over an excessive period of time. In tuberculous woman a premenstrual rise of temperature to 99.4° or above is frequently noted.

Associated with the instability of temperature

is found an instability of the pulse particularly with regard to rate, the daily fluctuation in number of beats being much greater than normal. Moreover, as a result of physical or mental exertion the rate is accelerated out of all proportion to that occurring under similar conditions in the normal, and this increased rate is maintained over an excessive period of time.

Fatigue on slight exertion is as a rule an early symptom. The patient complains of inability to attend to his daily duties and states that the sense of fatigue is out of all proportion to the amount of work done. In contra distinction to the apparent fatigue associated with certain nervous conditions, in which the individual feels very tired in the morning, much stronger in the afternoon, and best of all at night, the tuberculous fatigue is due to a true exhaustion from work done. Thus the tuberculous person as a rule feels well in the morning and is tired out in the afternoon after slight exertion and is perfectly willing to retire as early as possible at night.

Instability of temperature, instability of pulse, fatigue on slight exertion, loss of weight, unexplained and moderate anemia and a low systolic blood pressure, all occurring in early adult life and not due to other demonstrable cause, may be considered as quantitative signs and symptoms of early tuberculosis and are sufficient to justify a probable diagnosis and to call for the institution of proper hygienic treatment and careful observation over a prolonged period of time. When in addition the qualitative deviations from normal as represented by pleurisy exclusive of empyema and the initial pleurisy associated with lobar pneumonia or pulmonary hemorrhage are discovered the diagnosis becomes assured.

Cough and expectoration, especially the latter, are not necessary adjuncts of early pulmonary disease. When first manifest, cough is apt to be hacking, dry, paroxysmal in type and associated with little if any expectoration. As the disease process advances, expectoration appears, the sputum at first being mucoid in character, later becoming muco-purulent and finally distinctly purulent in type. Tubercle bacilli are as a rule absent in the sputum of early cases, as they do not make their appearance until breaking down of pulmonary tissue has taken place. In fact the very absence of bacteria, particularly when associated with the presence of a large number of mono-nuclear cells in the sputum of an individual showing

slight afternoon temperature above the normal is strong presumptive evidence of tuberculous trouble. Again the manner of onset of cough and expectoration are suggestive. Many individuals suffer from attacks of acute illness which start as an infection of the upper respiratory passages associated with coryza and subsequently are followed by a diffuse bronchitis with cough and profuse expectoration over a limited period of time. The tuberculous individual however, usually begins to cough and expectorate without a previous "cold in the head" and the observing patient will frequently make mention of this peculiarity of onset at his first visit.

Reference to the physical signs of early pulmonary tuberculosis has been purposely omitted. Volumes might be written on this subject, most of which would not be worth the paper used. To describe slight changes in the normal breath sounds in such a manner as to convey a uniform impression of their character to others is a most difficult task. Suffice it to say that the physician who insists upon the presence of rales before arriving at a diagnosis of active tuberculosis is led into grave error. It is true that localized rales at one apex are the earliest physical signs, still rales are notoriously evanescent in character, heard at one time and not at another. They are of slight importance compared to the changes in the fundamental breath sounds, such as harsh inspiratory murmur, prolonged expiration at one apex, or localized cog-wheel breathing which represent fixed and definite changes which may be observed in a given area at any time and which when associated with an afternoon temperature of 99 degrees or above, justify a diagnosis of active tuberculosis.

Finally, it is not the purpose of this paper to enter into a discussion concerning the merits of tuberculin as an adjunct in the diagnosis of pulmonary tuberculosis, except to reiterate that the von Pirquet skin test whether positive or negative in its results is of no value whatever in the diagnosis of tuberculous disease after infancy and that its future use in adults for this purpose should be abandoned.

To sum up briefly the facts which would lead to a diagnosis of early pulmonary tuberculosis may be tabulated as follows:

HISTORICAL FACTS SUGGESTIVE OF POSSIBLE TUBERCULOUS DISEASE BEFORE THE TIME OF EXAMINATION.

1. Prolonged intimate association with a tuberculous individual.

2. History of pleurisy with the exception of empyema and the initial pleurisy of lobar pneumonia.

3. History of pulmonary hemorrhage.

4. History of fistula in ano.

5. Previous attacks of pneumonia not frankly lobar in type, particularly when recurrent.

6. Frequent and prolonged attacks of "grippe" associated with cough and expectoration and profound prostration.

DEVIATIONS FROM NORMAL INDICATIVE OF ACTIVE PULMONARY DISEASE.

1. Quantitative deviations.

- (a) Instability of body temperature.
- (b) Instability of pulse rate.
- (c) Increase of fatigue sense.
- (d) Loss of body weight.
- (e) Unexplained and moderate anemia.
- (f) Low blood pressure.

2. Qualitative deviations.

- (a) Pleurisy.
- (b) Pulmonary hemorrhage.
- (c) Chronic cough and expectoration.
- (d) Physical signs of disease of the lungs.

WHY TUBERCULOSIS IN CHILDHOOD IS IMPORTANT.

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There have been since 1900 two highly important developments in the crusade against the great white plague:

1. The powerful voluntary organization which is now conducted by laymen, under medical direction, doing educational and relief work in tuberculosis. This is the greatest popular movement of the sort the world ever saw and with wise co-operation on the part of the medical profession, will surely influence all public health propaganda for good.

2. The recognition of the importance of the age of childhood in combatting this infection. The von Pirquet skin reaction which enabled us to recognize latent infections by a simple and painless procedure, was the beginning of the investigation of this phase of the question. Some of the conclusions arrived at in these studies will answer the question of our title.

In the first place it was thoroughly demonstrated that tuberculous infection is almost universal among children who have reached the age of puberty. Hamburger's conclusions are as follows:

1. The demonstrable tuberculous infection in large numbers of living children increases with each year of age.

2. At puberty almost all children of the poorer classes have already been infected by the tubercle bacillus.

These conclusions were fully confirmed later by post mortem studies in many parts of the world. One must believe then, that this is the most common of all diseases in childhood.

That this universal infection leads to the most terrible fact of the whole problem is undoubted. The fact is: "For youth and early manhood and womanhood (15 to 29 years of age) one third (33.2%) of all the deaths are due to tuberculosis in some of its forms." (U. S. Census).

One must lay especial emphasis here upon the distinction between tuberculous infection and tuberculous disease. The one of course must always precede the other, and, once lodged, tuberculous infection may remain latent for years, to become clinically active only when the defensive powers of the body are for some reason, exhausted.

THE CLINICAL PROBLEM.

The recognition of tuberculosis of the bones and of the cervical glands has long been mastered by the surgeons. These cases, however, we now know are greatly outnumbered by those children who suffer from the disease located in the chest. Here the mediastinal lymph glands, so-called bronchial, and peri-bronchial glands, are highly important structures. The respiratory mode of infection seems the most frequent and the infective agent lodges and grows somewhere along the respiratory tract, usually near the division of a bronchus or bronchiole. From here, however, its spread is to the neighboring lymph-nodes by reason of the action of the defensive agencies of the tissues. Here the process may be arrested, or may continue freely, in which case symptoms soon appear.

The early recognition of these symptoms is highly important. Prognosis depends very largely on this. While spontaneous recovery is frequent in childhood without recognition of the condition, one cannot escape the belief that from this class comes that dreadful tuberculosis mortality in the ages of 15 to 30. Kept latent during the active and healthful life of childhood, the infection appears as the dread disease when the burdens of adult life are assumed.

The clinical problem then is to recognize these early infections in childhood, to treat

them vigorously, and to teach the hygienic principles upon which we must largely depend to hold the disease in check.

INFANCY.

So susceptible are infants to this infection, and so universally fatal are the results, that it seems little short of criminal to expose an infant to the dangers of residence in the same house with an expectorating case.

Fortunately we have in the von Pirquet skin reaction, a test of great usefulness for this age. In any illness following exposure; and in nutritional defects or chest disease without obvious cause, a von Pirquet should always be made. Up to the age of three years, a positive result is sufficient clinical evidence of tuberculous disease. A negative result may occur in the presence of tuberculous infection if a severe tuberculous process is present or if some acute infection, such as measles is present in the incubation stage. The outlook in infancy is certainly bad. Sixty-seven per cent. of all cases of tuberculosis meningitis die under five years of age, and about 45 per cent. of infants who die from tuberculosis, develop terminal meningeal symptoms. Before no infection at present does the medical attendant stand more helpless than when confronted with tuberculous meningitis.

CHILDHOOD.

After the age of three years the von Pirquet reaction is less valuable but still of no inconsiderable import. The diagnosis, however, must be confirmed by other signs and symptoms. These are both (1) constitutional and (2) local.

1. Malnutrition, failure to gain in weight; lassitude, pallor, loss of appetite, irritability; irregular temperature, daily range abnormal; increased rate of pulse; anemia. These are common to many other forms of illness. When present and persistent without obvious cause they should lead promptly to a thorough examination of the chest.

2. Cough without evident cause. Evidence of increased mediastinal density and intrathoracic pressure; cervical glands which can be felt enlarged down to the clavicle are almost certain to lead to more enlarged intrathoracic glands. In later cases of course there are the usual signs of pulmonary involvement. The symptomatology of these later cases is much too involved to discuss here. It varies from the purely miliary type to a frank pneumonic process.

A great aid to diagnosis is to be found in an X-Ray of the chest taken and interpreted by an expert.

SUMMARY.

To recapitulate, then, this disease is important in childhood, because of its wide prevalence and fatal issue in later life. Its study is important also because its recognition is often not easy. In this respect the following points should be borne in mind:

1. History and exposure to infection.
2. Constitutional symptoms which persist without evident cause.
3. X-Ray of chest.
4. Von Pirquet skin reaction.
5. Local signs in chest.

David Whitney Building.

TUBERCULOSIS OF THE KIDNEYS.*

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There is probably no condition in surgery which has had a more thorough overhauling during the past fifteen or twenty years than the study of tuberculosis of the kidneys, as practically all our present day knowledge of that condition has been brought out during that period. However, during the early years of the 19th Century, a number of isolated clinical studies and autopsy reports of tuberculous kidneys were made. Until about 1885, it was the general opinion that tuberculosis of the kidneys was an ascending condition which began in the bladder or genital organs and involved the kidney by extension up the ureter. To-day Steinthal's theory, which he advanced in 1885, that the kidney is infected through the blood system is now generally accepted and there is no doubt that the disease spreads down the urinary tract as was suggested by Baumgarten.

Simon demonstrated in 1869 that one kidney could be removed and the remaining kidney carry on the necessary function providing it was a healthy kidney. Soon after this operations on tuberculous kidneys followed. But the operative procedures were indifferent and half-hearted until the early nineties when very marvelous progress in surgical treatment of this condition was made.

Tuberculosis of the kidneys is by no means so rare a disease as was formerly supposed. About 10 per cent. of those dying from tuberculosis show renal involvement. The disease

is found most frequently in adults between the ages of twenty and forty and affects both sexes. In 10 per cent. of the cases of tuberculosis of the kidneys, the affection is bilateral. At the beginning, however, it is almost exclusively unilateral. It is a chronic disease and unless interrupted by surgical treatment may run a course of many years. The average symptomatic period is three to five years.

The onset of the disease is so insidious, and the symptoms referable to the kidney are so slight, that attention, as a rule, is not called to the kidney as a source of the persistent pyuria or vesical irritability until the disease is well advanced. Some patients complain of dull aching pain in the region of the affected kidney. Occasionally, the kidney on the opposite side gives rise to some symptoms due to the compensatory congestion and hypertrophy. The affected kidney is usually enlarged and frequently tender. It is frequently the case, however, that the sound kidney may be as much enlarged and as tender as the diseased one. The usual symptoms of inflammatory disease of the kidney are lacking unless the ureter is blocked or there is an associated calculus disease. In the later stages we have chills, sweats, fever, loss of weight, etc. It is striking how, with severe renal tuberculosis, the general condition of the patient may be unaffected. *Frequent absence* of local symptoms referable to the kidney is a striking characteristic of renal tuberculosis. Marked vesical disturbance, as frequent and painful urination, is the most common and most characteristic symptom of renal tuberculosis. It is this vesical irritability, as either the sole or the predominating symptom, in the clinical picture, which so frequently leads us astray and involves the patient in a long course of painful bladder treatments which yield no results. About 90 per cent. of all cases present this as the initial symptom.

Some cases show a marked polyuria. The urine is pale, of low specific gravity, acid reaction and contains albumen in proportion to the kidney changes and the amount of pus present. Hematuria is one of the less frequent symptoms, although it may be the initial symptom. The cardinal symptoms of renal tuberculosis are frequent and painful urination, long continued pyuria which resists all local treatment of the bladder, a contracted sensitive bladder and the finding of the tubercle bacilli in the urine.

A thorough clinical history is of the highest importance in arriving at a correct diagnosis. Every patient complaining of bladder symptoms

*Read before Calhoun Co. Medical Society, May, 1915.

should be carefully questioned with the possibility of renal tuberculosis in mind.

In those cases with blood, pus, and tubercle bacilli in the urine the diagnosis is comparatively easy but it may be extremely difficult in the early cases where none of these abnormal elements can be found. A persisting, chronic acid cystitis which resists all ordinary medical treatment is highly suggestive of renal tuberculosis, especially when there is evidence of tuberculosis in some other part of the body. The presence of nodular enlargement of the epididymis or prostate is of special value in the physical examination and should be looked for in every case of irritability of the bladder in the male. The ureter may be found to be enlarged upon rectal or vaginal examination. In the diagnosis, the examination of the urine is of great importance. The examination for tubercle bacilli, when performed carefully, gives positive results in about 90 per cent. of all cases. If, however, with a case of persistent irritability of the bladder and pyuria, the tubercle bacillus cannot be found microscopically in a catheterized specimen, a guinea-pig should be inoculated with urinary sediment. Particularly in early infections is the guinea-pig test practically infallible, and it is unfortunate that because of the expense, technical difficulties, and length of time involved, the method is not now more available.

When a tuberculous infection of the urinary tract has been positively diagnosed, it remains to find out which side is affected and how far the disease has spread. This can only be done by cystoscopy and catheterization of the ureters. Urine separators and segregators are unreliable. By cystoscopy, the exact condition of the bladder can be obtained and often a decision may be made as to which kidney is diseased from the condition of the orifices of the ureters and their surroundings. Some observations have been made, however, which show a diseased orifice of the ureter on the healthy side of the bladder. Which side is diseased, to what degree the diseased side is affected, and whether the function of the sound side is normal or to what degree it is functioning, can be determined from the microscopical examination of the urine obtained by ureteral catheterization and a functional diagnosis of the kidney.

The prognosis of renal tuberculosis in cases not operated is bad, and, in those operated depends upon the extent of the involvement, the length of time the disease has existed before

operation and the functional capacity of the remaining kidney.

Surgery offers the only satisfactory means of treating renal tuberculosis and operative measures should be carried out as soon as a positive and complete diagnosis is made. Attempts have been made to replace surgical treatment by use of tuberculins, anti-tuberculous serums and immunizing bodies. But there are only a few published cases of recovery under such methods, and these are for the most part unreliable, for we know that kidney tuberculosis is subject to remissions without any treatment at all. Isreal states that tuberculin is of no value whatever in the treatment of renal tuberculosis, and should not be used even in very earliest stages of the infection. While Murphy on the other hand says, "if patients, in the early stages of tuberculosis of the kidney, where you have no obstruction to the ureter and drainage is good, are put under good hygienic and properly administered tuberculin treatment, so there can be a complete repair of the disease and for an indefinite period of time, they may become perfectly well." Kümmel, Isreal, Casper, Kelly, Mayo and others have reported cases which have been operated after they were pronounced cured by some of these methods. However, to obtain the best results, I believe that medicinal treatment, in the shape of tuberculin and hygienic and climatic treatment should be combined with the surgical treatment, as a prophylactic measure, and not with the hope of obtaining a cure. Every case of unilateral tuberculosis should be dealt with by nephrectomy as soon as the other kidney has been found capable of carrying on the renal function. Even when one kidney is extensively involved, and the other kidney only slightly diseased, as shown by the functional tests, nephrectomy of the most seriously affected kidney may be undertaken with much hope for success, as it has been shown that kidneys which functionate moderately well are apt to improve after removal of the more seriously diseased kidney, because greater demands are made on their functional capacity and the toxic effect of the diseased kidney is removed. However, if the second kidney does not come up to the requirements nephrotomy and drainage of the abscess cavities is indicated.

Isreal has reported fifty cases in which nephrectomy has been done for bilateral tuberculosis and gives the following indications for operation in the latter: (1) "When more good can be expected from the removal of an in-

fectious focus than harm from the loss of the parenchyma; as may occur in severe caseous degeneration or suppuration. (2) When there is a vital indication from repeated severe hemorrhage. (3) In complicated cases where there is severe pain which cannot be remedied otherwise." This coincides with the opinions of most men at the present time.

The primary mortality after nephrectomy for tuberculosis is about 3 per cent. and the fatal cases are mostly complicated with pneumonia, myocarditis, embolism or meningitis. Braash, in a recent paper, gave the results obtained in 203 cases operated upon at the Mayo clinic in which the primary mortality was 2.9 per cent. The secondary mortality in about 15 per cent., and death is usually caused by pulmonary involvement.

After operative treatment about 80 per cent. of the patients live many years and a large percentage are permanently cured. The local influence of nephrectomy upon the bladder and urine depends upon the degree to which the disease has advanced at the time of operation. Pus and bacilli in the urine disappears very slowly and the vesical trouble also disappears slowly.

After the tuberculosis has been cured, nephrectomized patients are as resistant as those with both kidneys normal, provided they are not exposed to danger from exhaustion and over exertion.

Kümmel, in a recent article in the *Journal of the American Medical Association*, gave a summary of his researches of the later fate of patients after nephrectomy for renal tuberculosis. In 386 patients there was a permanent cure in 80 per cent. after two years. Patients with only one kidney, as a rule, passed through pregnancy without disturbance. They tolerate morphine, ether anesthesia and serums but bear chloral and veronal badly.

Statistics show that great progress has been made every year in our modern methods of functional examination and in the diagnosis, operative indications, and prognosis of renal tuberculosis.

THE WORKSHOP AND STORES IN THE SPREAD OF TUBERCULOSIS.

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The dwelling place of the consumptive is the richest granary of tuberculosis. It is made so because the consumptive spends most of his

time in it during the contagious period of the disease; in fact, the last few months are almost entirely spent in the dwelling. On account of the long duration of consumption, however, other places than the dwelling likewise become rich granaries of the bacillus. The foremost are the places where the consumptive works, be it in the workshop or store. It would be difficult to estimate the average length of time which the consumptive devotes to his business before giving up. It is usually much longer than is generally supposed. With some it is nearly a lifetime. It is true, consumption is not contagious during the entire working period. Often there are intervals of months or even years during which no broken-down lung tissue is expelled. However, in every case there may be months at a time following a cold or an attack of softening during which the patient works and gives off contagion. After cavity formation contagion is continuous. The workshop does not gather up tubercular matter as rapidly as a dwelling because the consumptive spends less time in the work place and also while in it, it is less productive of tubercular matter. In the end it surely becomes contaminated.

There is less restraint in the workshop than in the home, because, as a rule, the workman spits where he pleases in the workshop and the dirtier the place is, the more careless he becomes as to where he spits. The dirt and tubercular matter dry up and are ground up into fine dust. This dust is always suspended in the atmosphere while there is activity in the shop or store and deposited upon everything when work is interrupted. Fellow workmen inhale the tubercular laden dust with every breath and carry it into their stomachs when eating their lunch. Therefore the condition for the implantation of the tubercular bacillus are nearly as good in the workshop or store as it is in the house. The only difference is, the exposure is not so continuous or the contagion so intense. The workshop exposure is usually eight hours out of every twenty-four: in the house from sixteen hours and sometimes the entire twenty-four hours. The time during which the greatest amount of expectoration takes place, is in the morning and evening and these hours are usually spent in the home. Implantation of the tubercular bacillus in the workshop is facilitated very greatly by poor ventilation, because workshops are built for business and not for the health and welfare of the employes.

The amount of cubic air space to the work-

man for health while indoors is not considered and no provision is made for efficient ventilation except in the most recently built factories which we are glad to note, are building factories where the health of the employe is taken into consideration. Employers of labor are beginning to realize that a workman, to produce the maximum amount of work, must be in good health, and no workman can produce, for his employer, all there is in him if his working environment is not right. In some kinds of work open windows are not permitted because this would interfere with good work. This applies especially to some kinds of painting, varnishing, and cigar making, and this, in my opinion, accounts, in a large measure, for the great number of cigar makers who die of tuberculosis.

Rebreathed air is poisonous and interferes with nutrition. It is, therefore, good soil for the tubercle bacillus and its associates. It works along the same line of destruction.

Workshops into which tuberculosis has once been introduced have their victims continuously at regular intervals. As one case ends another begins. Usually there is a long list of deaths marked up against them.

Workshops in which the occupation sets up a very irritating dust, such as steel filings, pulverized stone, etc., usually have a very high death rate from consumption because the irritation sets up in the delicate mucus membrane, prepares the way for the admission of tubercle bacilli into the bronchial lymphatic glands.

I now come to the spread of tuberculosis in the store and in this, I wish to show you the cause and reason why that in our large cities the death rate among clerks and other employes, in the large mercantile establishments, is so great.

Wherever a consumptive is during the contagious period of his disease, there is an environment of contagion. The capacity of this environment for implantation depends upon the habits of the consumptive and the length of time of contact and the sanitary surroundings and management of the place. Should the habits of the consumptive be in strict accord with the teachings of preventive medicine, then the environments would remain sterile, no difference what the length of exposure or the sanitary management of the place may be. In proportion as these habits deviate from the teaching of science, lengths of contact and sanitary management become controlling factors. How much time a consumptive with incorrect habits must spend in a place to create an en-

vironment competent to implant the tubercle bacillus cannot be determined with exactness. Other factors such as the amount of tubercular matter given off, the susceptibility of those exposed, and the sanitary condition of the environment, enter into the matter. It may be said, however, with a fair degree of positiveness, that it must be a considerable time—momentary stay in a place, no difference what the habits or the sanitary conditions may be, will not produce such an environment. Neither can it be determined with accuracy what part the sanitary conditions play in the establishment of a fertile environment. In a general way, it may be said, however, that good sanitation proportionately neutralizes incorrect habits and lessens the time necessary for implantation.

These modifying factors of contagious environment must be kept in mind when studying stores in the spread of consumption, because in stores we not only have fellow employes to consider, but also the customers of that store. In nearly all large stores there are consumptives in all stages of the disease, from a mere implantation to a large cavity variety at which the disease constantly is contagious. Probably 25 per cent. of all store employes have an implantation of the tubercle bacillus. Ventilation is bad and the air is constantly rebreathed. Many employes are badly nourished and are in a receptive condition. The one redeeming feature is that the stores are large and have to be kept clean. The constant presence of many persons, to some extent, enforces habits of cleanliness and refined manners. The spread of tuberculosis in stores is chiefly from employe to employe, because a consumptive may work near a non-consumptive and so cause a constant exposure.

Fertile environment probably does not extend beyond the counter of the consumptive, and even this lessens in proportion to the distance away from the place where the consumptive stands. Purchasers probably do not run any risk while making the purchase. However intense, the contagion exposure is too short to give implantation. Tuberculosis requires a long exposure for implantation. The real danger to the purchaser lies in the goods which are purchased and taken into the home, because an unclean consumptive contaminates everything which he handles. Goods handled by such a consumptive may become smeared with a good deal of tubercular matter. Even in goods sent home, the danger is not great unless, perhaps, with food which is eaten in the raw state.

Other things would not be liable to convey enough bacilli to give an implantation except to people of a very strong predisposition.

The kind of stores from which there is the most danger to the purchaser, is the candy stores, fruit stores and grocery stores; even these are not so dangerous unless purchases are made from the same stock for a considerable length of time.

THE HYGIENIC TREATMENT OF TUBERCULOSIS.

JAS. D. DUNLOP, M.D., C.M.
ALPENA, MICHIGAN.

On the 7th of June I received a letter from Dr. V. C. Vaughan, Jr. of Detroit asking me to contribute a short and concise article on the "Hygienic Treatment of Tuberculosis." The doctor also asked me to "as far as possible avoid matter of interest only to the specialist in tuberculosis."

The hygienic treatment of the disease in question occupies so large a portion of the field and has been covered so exhaustively so many times by eminent practitioners the world over, that one must confine himself in a short article, to hygiene in its most constricted sense.

There is something very significant to me in Dr. Vaughan's words "as far as possible to avoid matter of interest only to the specialist," because it augurs (Dr. Vaughan being an eminent specialist himself) the important possibility of specialists and general practitioners coming closer together to the very great advantage of themselves and to the untold advantage of their patients.

For some reason or other my experience in the treatment of this disease has been much more largely among women and girls than among boys and men. It may be that we have a larger percentage of the former affected in this immediate vicinity than is found in other places. At any rate, the most of what I shall have to say will be along the line of treating women and girls.

I cannot go farther without stating a conviction that I have, borne out by my own experience; viz., that tuberculosis is almost always preceded by malnutrition from one cause or another or some affection either functional or organic. Bearing this in mind, the hygienic, or any other treatment, must be directed with the hope of removing the primary cause or disease.

It is unnecessary in this article to indicate

what these primary causes or diseases might be; and I do not mean the infection itself, but that which prepared the soil for the ready propagation of the seed. I will mention a few lesions, however, because some of them have only recently come into prominence as real causative factors. Any distressing affection of the urinary or alimentary tracts will be noted and spoken of by the patient, and will call for immediate attention; but the genital tract will scarcely ever be alluded to unless the physician has reason to suspect one or more of the many troubles which may arise there, and goes carefully but minutely into details. The condition of the oral cavity is of the greatest importance in many cases, and may be overlooked. Here bacteria are often at work in myriads, lowering the vitality. Infections are taking place, increasing the temperature and introducing dangerous toxins. Even advanced pyorrhea alveolaris may be present and must have attention. Each physician will find these things out for himself before commencing treatment. An abundance of fresh and pure air has been heralded to such an extent that even the laity consider it as paramount. With the purity of the air I have no fault to find, but I have seen patients time and again exposed to air that might easily be considered, if a little sound thought were given the subject, as being considerably too fresh. The air should be pure, in great abundance, kept slightly in motion by some means and, perhaps, more important than all, contain the proper proportion of humidity.

Baths, I have found, frequently of service. Carried to the point of cleanliness, they are absolutely essential. If the temperature rises above 101 the best bath is equal parts of alcohol and very hot water, never cold water. The method I use is for the attendant to take the palm of the hand full and simply spilling this with a rubbing motion over as large a surface as possible, then refill the hand a sufficient number of times to cover the entire body as quickly as can be done without undue haste or excitement. Soon the temperature will be materially reduced without any shock that will do other than stimulate the nervous system.

The power of the physician to impress upon his patient the all-important fact, (and sometimes whether it be a fact or not, perhaps, we had better call it an impression), that she is going to get well, is of the greatest importance. For, despite the opinions of the laity and many physicians, to the contrary, tuberculosis is not a painless, cheerful disease. It is a melancholic,

distressing affection of long duration at best, and in a majority of cases, most witheringly discouraging; but it *can* be cured and is being cured every day.

If somebody who knew how would write the psychological treatment of tuberculosis they would be conferring a great boon on humanity. For in my experience psychology is a powerful therapeutic agent.

I am not quite sure that I am holding fast to the hygienic treatment of tuberculosis for the word hygiene, after all, means so much and so little that I, at any rate, must admit I am not quite sure what Dr. Vaughan asked for.

In the majority of cases that have come under my care I have found the pectoral muscles not only atrophied but constricted. I am speaking now of cases where the musculature in general is nearly normal, and I have found that judicious massaging in the shape of gentle friction, a gentle kneading with the thumb and three fingers of the hand, this combined with light pressure and a rotary but stationery movement of the same three fingers; doing these three movements alternately over a period of from several minutes to half an hour, relieves the chest constriction, helps to stop the cough, develops the bust (which, by the way, has a powerful psychological effect on the average female), and stops many annoying pains that are mostly attributed, by the patient, to "pains in the lungs." If the larynx is involved, the same gentle massaging is of great benefit carried out practically over the entire neck. If the patient is emaciated this same treatment over the limbs and body is of great value. I have a patient now under my care who was troubled with an obstinate insomnia. I didn't wish to disturb an already irritable stomach by sedatives or narcotics; nor did I care to take the chance of depending on hypnotics to produce the rest that was absolutely essential in her case. Her attendant readily became an adept in what I desired done and massaged the patient, in the manner described, for half an hour or more just at bedtime. In less than a week she commenced falling asleep before the massage was completed. Now, for over three months, she has slept soundly every night. Her chest has increased in size to such proportions as to be exceedingly pleasing to her and, apart from all other important considerations, has a markedly beneficial effect from a psychological standpoint. Menstruation too has appeared in the last two months and prior to that time there had been no epoch of the kind for about five months.

In this case both lungs are involved and our state bacteriologist found numerous tubercle bacilli and pus cells in the sputum. There is no question in my mind but that massaging of the chest, in the manner indicated, with the results which are so apparent to the patient, is a distinct benefit, no matter whether it be termed strictly hygienic or not.

I give my patients all the food they can eat, not all they can be made to eat. Alcohol in every form, except in the valuable way in which I have stated, is interdicted "first, last, and all the time."

I have adopted a simple and efficient method of taking care of the sputum so that there is little danger to the attendants or family from that source.

It must be remembered that the general practitioner has not all the modern appliances so readily attainable in the large cities or sanatoriums.

I have the patient get a roll of ordinary toilet paper tear off a sheet or two, expectorate into it; put it immediately into a small paper bag or sack such as grocers use. Then, at frequent intervals, destroy the sack and contents by burning.

The recovery of a well-known case of tuberculosis in any community or neighborhood is a wonderful factor—from its educational and psychological influence—in the recovery of others; and this influence extends frequently to even remote places through correspondence among friends and otherwise.

Pleasant environment cannot be overestimated. The bright star of Hope should ever be kept shining before the patient and this star can be multiplied into many stars through the teachings and advice of a resourceful physician, backed up by attendants with convictions instilled into their minds, or if necessity demands, pounded in, until they are made to understand that they are fighting for a human life, that they are fighting a host of enemies that cannot be destroyed unless they are overpowered by greater hosts inimical to the existence of those enemies. Procrastination, indecision, doubt, discouragement, or the least wavering, have no place in such cases. Hope will not kill a single tubercle bacilli but it can be the straw in the balance. It might be the lightning up of a new inspiration that might kindle a tiny fire that could easily spread and drive the myriad enemies from their trenches and assist the flagging powers of nature to destroy them.

Hope inspires to better things
 Hope comes wafted in on wings,
 Wings that inspirations bring
 Dead'ning many a bitter sting.
 Inspirations help evolve
 Knotty problems hard to solve;
 But these problems all give way
 To resources of our day:
 Study, patience, faith, and grit
 Backed by knowledge, tinged with wit,
 A look of confidence, a smile
 Will drive discouragement a mile.
 And this will help the appetite,
 Providing strength to wage the fight.
 Warmth that's sifted from the sun
 —All essential every one—
 Hygiene, practiced as above,
 Combined with food and faith and love,
 Mixed with medicine, safe and pure,
 If used in time, will surely cure.

THE EFFICIENCY OF THE MODERN TUBERCULOSIS CLINIC.

The two essential elements in the campaign against tuberculosis among the poor are the sanitarium or hospital and the efficient tuberculosis clinic or extramural department. The chief functions of the hospital are the care of advanced cases which cannot receive proper attention at home and the training of early and moderately advanced cases both with regard to the mode of life necessary to their own welfare and with regard to the means employed to prevent the spread of infection to others. However the usefulness of such an institution is definitely limited by the number of beds available. On the other hand there is no limit to the number of cases which can be kept under supervision through the efforts of an efficient clinic. Every consumptive among the poor who has had the advantage of sanitarium training should subsequently be placed under clinic supervision. In this way only may the too frequently temporary benefits of sanitarium life become permanent.

The modern tuberculosis clinic differs materially from the clinic of ten years ago. Formerly the tuberculosis clinic was simply a place where a physician, usually a volunteer without pay, met patients all in the advanced stage of the disease and prescribed medicine. Occasionally the patient was also given some advice concerning the value of good food, and change of climate, the absolutely unattainable to one in

his financial state. Between clinic visits no supervision of patients was attempted and after a limited number of calls the patient subsequently failed to reappear. One must admit that such a clinic was largely a waste of time for all parties concerned.

It soon became apparent that to be effective in the slightest degree the supervision could not be limited to advice and treatment given solely within the four walls of the clinic room. It was essential for the clinic to reach out and become cognizant of the home surroundings of each individual case. For this purpose trained nurses were employed whose duty it was (1) To be in attendance at the clinic during clinic hours. (2) To visit all clinic patients in their homes and to see that the best available means were employed for the hygienic treatment of the individual case. (3) To instruct the patient and his associates with the means employed to prevent the spread of infection to others. (4) To urge the advisability of the examination of all the members of a household in which a case of tuberculosis exists regardless of the fact that they may appear to be in perfect health. (5) To investigate cases who have returned to their homes from the sanitarium and to impress them with the necessity of remaining under clinic supervision. (6) To see that proper disinfection of the premises is carried out after the death or removal of a tuberculous patient.

The following table taken from the report of the Board of Health Tuberculosis Clinic of one of our Michigan cities would seem to demonstrate the comparative efficiency of the above described clinic supervision:

	MALE		FEMALE		TOTAL
	Over 14	Under 14	Over 14	Under 14	
Early.....	68 16.54	72 88.88%	84 38.8%	61 82.43%	285 36.21%
Moderately Adv.	152 37.	3 .7%	56 25.34	9 12.16%	220 25.28%
Advanced	191 46.5	6 7.2	81 36.65	4 5.5	282 35.5%
Total	411	81	221	74	787

The inspection of the above table reveals the important fact that the total percentage of early cases under observation exceeds that of the moderately advanced and practically coincides with the percentage of advanced cases. This fact would seem to demonstrate that among these 787 tuberculous individuals there has been obtained a comparatively accurate supervision of all infected individuals rather than a supervision limited entirely to those manifestly in ill health as the result of their disease process. Such results can be obtained, how-

ever, only through the examination of all individuals regardless of their apparent health who have been intimately exposed to sources of infection over considerable periods of time.

RESULTS OBTAINABLE FROM TUBERCULOSIS DAY EXAMINATIONS.

It is not expected that a large number of early cases will be diagnosed as positively tuberculous at the Tuberculosis Day examination. We believe that every member of our State Society is competent to arrive at a probable diagnosis of early tuberculosis after several examinations of the patient over a considerable period of time. The specialist on this disease never arrives at an absolute conclusion with regard to an early case from the results based on a single examination. We expect that all persons applying who present gross pathological changes in the lungs, such as cavity formation and extensive consolidation, will be pronounced tuberculous. The examining physician should acquaint persons who give a history of attacks of pleurisy or pulmonary hemorrhage in the past with information concerning the probable

tuberculous character of the process from which they suffered. Such individuals should be advised that it is to their best interest that they present themselves before a physician at least at six months intervals for a thorough examination of the chest, or avail themselves of the opportunity afforded in the local clinic established for this purpose.

Individuals with chronic cough and expectoration should be acquainted with the fact that these symptoms represent a deviation from the normal which can only be due to the presence of a disease process of some nature. As the most common cause for cough and expectoration before middle age is infection with the tubercle bacillus, such individuals should be advised to collect a specimen of their sputum for the purpose of examination, such examination to be conducted locally if possible, otherwise a specimen may be forwarded to the laboratory of the State Board of Health at Lansing or in the upper peninsula. The physician should also impress upon these individuals that sputum represents a waste product which should be removed from the body, and that the same care should be shown with regard to its disposal as is taken with other body excrement.

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TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, June 14, 1915

The President, HOWARD H. CUMMINGS, M.D., in the Chair

Reported by REUBEN PETERSON, M.D., Secretary

CANCERS OF THE SKIN.

UDO J. WILE, M.D.

ANN ARBOR, MICHIGAN.

Dr. Cummings has asked me to open the discussion in this symposium on cancer. Cancer as it occurs in the skin presents an entirely different clinical picture from cancer as it occurs in other portions of the body. I may be pardoned if I digress sufficiently long to justify a nomenclature which I insist upon, at least in the discussion of cancer of the skin. Cancer in the skin occurs in the form of true carcinoma, malignant degeneration of glandular structure which is excessively rare, and much more frequently a degeneration of the surface epithelium. These two processes are distinctly different in their pathology, course and etiology. For that reason, I think one is justified in speaking of degeneration of the surface epithelium as epithelioma, a separate class of carcinoma, and restricting the term carcinoma as it occurs in the skin, to malignant degeneration of the sebaceous and sweat glands.

Considering first the etiology of cancer of the skin, I think we have at least a great deal more to offer than is offered in the etiology of carcinoma elsewhere. Certain very definite factors are known, if not as the ultimate cause, certainly as predisposing factors. First, it is known, for example, that carcinoma as it occurs on the skin is very apt to affect those who are exposed to the outside elements. It is particularly common therefore in country districts. In a very large service in New York City I saw but two cases of cancer of the skin in over 6,000 cases inside of two or three years. Here I think in the first year, in a clinic one-sixth that size there were forty-eight cases of carcinoma of the skin, mostly in farmers. It is particularly common in seamen, outside workers and coach-

men. At first glance it is rather difficult to understand this. When one considers, however, the factors which enter into malignant degenerations in the skin, particularly the vast number of conditions which are known as predisposing lesions, it is extremely easy to understand how the sun and wind should be predisposing factors. True epithelioma of the skin very seldom occurs on the unbroken horny epidermis. It almost invariably has a history of some pre-epitheliomatous formation. That is, it most always takes its source from an already disordered focus of keratinization. Together with senility, in those who have been subjected to the sun, there occur on the skin localized disorders or keratoses. Simple senile keratoses occurring as frequently as they do on the hands and face, represent foci from which carcinoma can very readily develop. If one examines under the microscope these senile changes, they are found to be simple disordered horny cells, in which the nucleus is still present, (the finished horn cell being a non-nucleated cell). In other words, the process of keratinization is so deranged that the horn cell is cast off in an unfinished condition. Such a lesion presents a slight focus for trauma. Occurring on the face, washing or shaving are very apt to cause an injury to this pre-epitheliomatous tissue. At some time the patient usually notices in the course of an ordinary keratosis that the crust spontaneously drops off. When that occurs, even before epithelioma can be demonstrated clinically, malignant degeneration has already taken place.

The same thing, I think, holds true of the epithelioma as it occurs in the mucocutaneous surfaces, particularly on the lip and just as frequently on the tongue. Here we have as a pre-epitheliomatous condition disorders of keratinization almost invariably, the most com-

mon being the leukoplakia. This is almost always the result of syphilis, a result of constantly recurring mucous patches, lesions which untreated lead to a local disorder of keratinization, a heaping up on the tongue of the same kind of unfinished horn cell. This is always potentially malignant.

In connection with keratoses and the reason for their becoming malignant on the skin, a very interesting theory having to do with radioactivity has been formulated. It is a well known fact that the same changes that the sun will cause in the skin by prolonged exposure can be caused by radio active substances. That is, by prolonged X-Ray exposure of the normal skin, and particularly in a blond individual in whom the defenses of the organism by pigment are relatively lacking, there occur keratoses. If the irritating factor of the radioactive substances is carried further these keratoses by simple prolonged exposure can undergo malignant degeneration.

A number of years ago I was interested in the question of the cancer which is supposed to arise from the ingestion of arsenic. Such patients develop pigmentation, keratoses on the palm, backs of the hands and on the feet and face. Occasionally such keratoses undergo malignant degeneration and usually are excessively malignant as compared with the epitheliomata on the other portions of the skin. How can one reconcile the malignant degeneration that occurs in keratoses from the ingestion of arsenic with the idea of the light factor as it occurs in the epithelium from keratoses of the skin? It has been suggested, and very properly, I think, that arsenic is a protoplasmic irritant. It enters the horn cell, can be demonstrated microchemically and chemically, and it sensitizes the individual horn cell to light. Such a keratosis is made more sensitive to the same factors which are present in the sun's rays in an individual who has not ingested arsenic. It has been suggested that this simple sensitization by the arsenic in the horn cell is sufficient to cause it to react more intensively to sunlight.

Epithelioma of the skin differs very markedly also from carcinoma in the relatively benign course that it takes. The ordinary epithelioma as it occurs on the unbroken skin has an excellent prognosis.

Just a word with regard to the treatment. The cases of carcinoma of the skin that get well with one form of treatment, I think will get well with any form. These cases which resist sur-

gical measures and radioactive therapeutic measures will go bad anyway. The prognosis is directly related to the contiguity to the mucous surfaces. The carcinoma of the cheek has an excellent prognosis on the outer side of the skin. As soon as it approaches the angle of the mouth, prognosis is vastly different. The ordinary carcinoma arising from the keratosis is of the basal cell type. That same lesion spreading to a mucous surface almost invariably is transformed to a squamous carcinoma, having a very much poorer prognosis than the epithelioma of the basal cell variety.

The true carcinomata of the skin, those arising in glandular epithelium, are excessively rare. There are two main types, those arising from degeneration of cyst walls, which are locally malignant, and which have a fair prognosis, and the very much rarer carcinoma of the sweat glands and ducts, which is relatively malignant, in which metastases occur quite early. Those are deserving of mention, although they are excessively rare conditions.

For the most part then, cancer of the skin as it occurs away from mucocutaneous junctions, carries with it an excellent prognosis compared to carcinoma elsewhere. It differs very distinctly from cancer, at least so far as we know, in other parts of the body in that we have at least a very definite factor of trauma. It is very seldom indeed when an epithelioma will develop on an otherwise healthy skin unless there has been some predisposing cause such as a keratosis which has been caused to undergo degeneration, or at least has been irritated by a constantly recurring traumatic factor.

DISCUSSION.

DR. REUBEN PETERSON: I wish the doctor, in closing the discussion, would say a few words about pigmented moles.

DR. WILE: I didn't mention pigmented mole perhaps through an oversight. The pigmented mole when it undergoes malignant degeneration is commonly called melanosis. I am very glad that Dr. Peterson brought the point up because it gives me a chance of stating a view which I have had that they are not sarcomata but carcinomata. My reasons for believing that they are carcinomata rather than sarcomata lie in the histogenesis of the naevi cells from which they arise. The ordinary fleshy mole is a structure full of strands of cells underneath the epidermis. They look neither like connective tissue cells, nor do they look like epithelial cells. They look rather like endothelium. There are two theories advanced as to their histogenesis, one that they are connective tissue cells, another that they are snared off portions of the surface epithelium, fetal rests which are snared off from the epidermis during intrauterine life. Of course, a malignant

tumor arising from such a growth would necessarily be a carcinoma rather than sarcoma. On the other hand, if they are connective tissue cells, then the malignant tumor is a sarcoma. During the last week we had such a growth in our clinic, a man who had had a mole all of his life on the side of his neck, which developed very rapidly a round, level, soft, lesion definitely pedunculated, tending to have hemorrhagic points in it, and clinically, surely then a sarcoma. It was not generally malignant. It was very well encapsulated, stood out well from the surface on the epidermis, and I predicted pathologically at least, it would be a carcinoma. The pathologic report was that of a basal cell carcinoma, the least malignant of all. The best view to take of the true melanotic sarcoma is to call it a melanoma, which does not commit one to its histogenesis. It represents the most malignant of all types of cancer as it is seen on the skin.

Every pigmented mole which is blue-black particularly, which occurs in a site where it is subjected to trauma, should, I think, be removed as a precautionary measure. The ordinary pigmented flat mole which everyone of us has, the simple brownish mole, very seldom or never undergoes malignant degeneration. It is almost invariably the blue-black mole that undergoes the carcinomatous or sarcomatous degeneration.

REMARKS ON THE CLINICAL SIDE OF CARCINOMA OF THE BREAST.

C. B. G. DE NANCREDE, M.D.

ANN ARBOR, MICHIGAN.

When carelessly answering the president's request for a paper I did not mean by the title I suggested that I was going to attempt to cover the whole subject of the clinical side of carcinoma of the breast or even limit myself to carcinoma in this region. I intended to convey the idea that I would try to say something about the clinical aspects of malignant disease of the breast. What I have to offer for your consideration tonight is a few scraps that I have collected and thrown together rather loosely, and what I should have said to the president was that I would make some clinico-pathologic remarks on diseases of the breast. It would be simply impossible in fifteen minutes to pretend to cover the subject adequately, even if I were competent to do so. But there are a few ideas that have stuck in my mind after some fifty years as student and practitioner. I am going to give these rather loosely correlated ideas for your consideration.

While there is much requiring most careful consideration on the clinical side of carcinoma I shall restrict my remarks to certain points regarding malignant disease of the breast, not confining myself strictly to that special histo-

logic form, which we designate by the term carcinoma for reasons too manifold and manifest to require explanation. Although unquestionable diagnosis is of paramount importance, I shall touch upon this only indirectly, as it were, because of the attitude I assume respecting treatment in doubtful cases, when the female mammary gland is concerned. Two opposite positions are taken by extremists. Certain clinicians contend that benign tumors so very rarely undergo dangerous alterations that such chances can be ignored, provided the original diagnosis is correctly made and that this can always be done, while some pathologists insist upon the "potential malignancy" of all tumors, hence claim that the only real safety is removal in all instances. The personal equation explains in part these radical differences. In the final analysis many decline to accept the conclusions of either as correct or wise; unless with so many qualifications and exceptions that the original positions are no longer tenable. The pathologists' belief is founded on the unquestioned fact that a certain number of growths presenting identical clinical symptoms with others which remain unchanged, eventually exhibit evidences of indubitable malignancy. When examined histologically these latter show in some parts a structure identical with others presenting the same primary clinical symptoms. The vast majority of these persist unchanged in their clinical course and histologic structure for a long series of years, or for a lifetime, only in rare instances changing their clinical behavior and manifesting those alterations which we term malignant. Microscopic examination explains all this, showing indeed benign, adult, normal tissues, but also areas where immature, almost embryonal tissue predominates or is alone present with the riotous, unchecked, purposeless multiplication of cells which fail to become functioning tissue cells, infiltrating and substituting the normal structures. This surely is the essence of malignancy. Therefore some contend that all tumors are potentially malignant, and should always be removed when detected. If by this is meant that low grade, possibly ill-nourished tissues, without the usual restraints of normal environment are more liable to yield to the exciting causes which determine malignant disease, I readily admit this "*potential predisposition*" but we must discriminate between this, and an actual specific tendency to malignant change, in the absence of that unknown, exciting cause which provokes the development of carcinoma

or sarcoma in perfectly normal tissues. When we compare the innumerable cases of clinically and histologically benign growths with the comparatively few which lose this benign character, we cannot subscribe to the dictum that any and every benign tumor demands prompt removal. If, on the other hand, we find that certain classes of neoplasms which remain clinically benign for long periods, yet supply us with an undue proportion of cases of "*malignant degenerations*" as compared with other classes of neoplasms which are also believed to be benign, it becomes our duty to study in what way, if any, the histologic structure of the first class differs from that of the second class, which rarely if ever undergo these untoward changes. We should then endeavor to correlate any differing clinical symptoms with these differences of structure. If after prolonged effort this proves at present impossible, it cannot be denied that it is then our duty to err on the safer, the *operative* side of therapeutics. I do not propose attempting the at present impossible task of determining the differential diagnosis of such conditions but merely suggest a tentative approach to the study of this vastly important subject. Kindly bear in mind while listening to my remarks that I am only attempting the roughest sketch.

Few will deny that a series of microscopic sections could be prepared of a traumatised mamma which would show an almost imperceptible gradation from the processes requisite to repair a trivial injury up to the border line between repair and neoplastic formation, until the point is reached where the decision from any one specimen becomes doubtful, because of abnormal mitotic figures presented by the newly formed or forming cells. Closely related to doubtful areas undoubted areas of malignancy may be detectable, while in other instances with apparently a similar propinquity the appearances may be decided to indicate benignancy by another equally competent authority, possibly by the same observer. Such a fortunate conjunction of conditions in sections from one specimen can hardly be expected, but I doubt if any observer will deny that in the course of numerous examinations of different specimens from other than undoubted neoplastic areas what I have mentioned has not at some time been observed by him.

These appearances and others have even led competent observers to explain malignancy by claiming that during the reparative or inflammatory processes, certain cells, segregated from

their fellows and removed from their restraining environment, multiply with unchecked luxuriance, and no longer controlled by normal conditions cease to have any limit placed upon their invasion and replacement of the healthy tissues. Whether this alleged lawless multiplication depends upon removal of environmental restraint, or a stimulus from some special substance overcoming normal restraint, or the abundance of pabulum, the theorists do not state, nor do I attempt to do so, for I am neither endorsing nor attacking this theory, but calling attention to it, as having been considered worthy of serious consideration by more than one competent histopathologist. If true in any measure it is suggestive for clinical purposes, and would clarify certain obscure clinical conditions. May we not hope and expect from the many advances already made, that a more careful combined clinicopathologic study may lead to solution of the often vexed question, is this a benign growth undergoing malignant change, is this an innocent change, and when and to what extent will surgery avail?

If some of our cystic benign mammary neoplasms are thoroughly examined no essential difference can be pointed out from others seen in carcinoma, except in their relation to the stroma, careful examination of other portions of these apparently benign growths show in a few, perhaps in only one of the cystlike spaces, ingrowths of masses of cells which are no longer normally related to the stroma, and none will deny that they are carcinomatous histologically. Unfortunately the presence of these intracystic malignant ingrowths cannot as yet be clinically predicated, yet if this could be done it would at once alter both practice and prognosis, for if any part is malignant, the treatment and outcome of that case depend on the minute malignant portion, not on the massive nonmalignant tissue. Moreover, has the last word been said concerning the histologic structure of the precancerous lesions? These small secondary malignant epiphenomena are often very hard to detect and require careful microscopic study of the whole growth. I am not the first nor shall I be the last to find occasionally a clinical diagnosis confirmed by the results, not because an incorrect histologic diagnosis was made, but because the diseased tissue was not examined. In the face of a decided clinical diagnosis by an expert diagnostician, only the most exhaustive histologic examination should invalidate it. In support of my plea for more extended examinations of

diseased tissues, and the combined study by the clinician and pathologist of all doubtful cases, let me quote a few only of my personal observations during an extensive experience. I am convinced that both our clinical and pathologic advance along fruitful lines is often hampered by inadequate pathologic examinations of diseased structures so that the clinical course and the histologic findings are not capable of productive correlation.

How can I explain the fatal metastases in a clinically diagnosed carcinoma of the breast without local recidives, except by examination of limited portions of the tumor which decided that the growth was benign, for the pathologist was an expert? How else can I otherwise reconcile the positive diagnosis of carcinoma (which was correct) and the subsequently equally positive opinion by the same most competent authority, that the breast was sarcomatous? Equally hard is it to believe that a thoroughly competent observer could not detect sarcoma, but only scar tissue in material removed at a secondary operation, when the same observer was later compelled to admit that the third growth was histologically and clinically sarcoma? How can I fail to have a demonstration of too limited histologic examination, when three sections made after levelling the imbedded block, revealed a typical squamous carcinoma, when an opinion of a number of competent men declared there was nothing but fibrous tissue, *because they had never sectioned the growth but only the cicatricial tissue?*

When the whole of a neoplasm cannot be sectioned, a most admirable practice, which, if more commonly employed would reveal some surprising facts, numerous blocks, not only from the focus, but also from apparently normal and also questionable areas should be sectioned, and studied with an unprejudiced mind, especially when clinical evidences point strongly towards malignancy. A sufficient number of such cases, carefully compared with and corrected by the clinical findings I believe in time would lead to a more correct differential diagnosis and therefore better therapeutics. Unless some such method be employed we shall make no substantial advance in the rational treatment of mammary growths.

Now as to the clinical application I think should be made of our present knowledge of mammary neoplasms. The question is often asked in practice, if not in words, "unless there are other special contraconditions, physical or psychic, when reasonable doubt exists, why not

remove the tumor and make the histologic diagnosis later?" If for no other reasons the patient is either subjected to an inadequate operation possibly leading to dissemination of a carcinoma or an unnecessarily extensive intervention is made. For many years I have been in the habit of asking myself certain questions. Do clinical evidences, irrespective of age, give me reliable grounds for declining operation? Does the clinical evidence leave a reasonable doubt that the growth is not benign and therefore that a conservative operation is not advisable? When doubt exists as to the nature of the condition, is the patient a female of childbearing age? If married has she borne children and successfully employed this breast for suckling? Is the other breast competent for this function? Would the conservative operation contemplated leave a breast of any functional value? Is the patient specially averse to sacrificing the whole breast? Are there neurotic or psychic prejudices legitimately requiring consideration, and a partial conservation of the organ?

If the answers do not forbid operation or the more important ones do not, I always advise radical operation. Of course my decision is only arrived at in a doubtful case, after a careful consideration of all the questions involved.

I am influenced, except in its favor, by radical operation in doubtful cases, because should infection occur, a partial operation is more dangerous to life and more apt to prove crippling than a complete one, for reasons which must be manifest to all.

DISCUSSION.

DR. DE NANCREDE: I anticipated a number of facts would be brought out that I purposely omitted. As I said, it would take several twenty-four hours to really cover the subject, but there are certain points that have not been touched upon at all. One of the troubles, it seems to me, as to our therapeutics of cancer, is our views as to its causation. We have been considering for years that germs must be the cause. There has never been any germ or set of germs or any kind of inferior organism, vegetable or not, that has been supposed to be the cause of carcinoma which has proved to be the causative agent.

What I hinted at is something which sounds more in accord with what we observe, and explains many things. I don't say it is the true explanation. It explains the fact that occasionally traumatism starts carcinoma or still more often, sarcoma; that traumatism apparently rapidly increases any malignant changes and the rate of invasion of established carcinoma. That forms of traumatism can possibly be invoked in all forms of carcinoma cannot be denied. The pylorus, the lower parts of the rectum,

the cervix uteri, the mouth, certain portions of the esophagus, are subject to traumatisms. We know that there are certain carcinomata that are traceable to repeated slight traumatisms, chemical sometimes. Possibly this latter is true of soot and of cobalt in carcinoma of the lungs. I want to call your attention to the fact that possibly we are on the wrong track and that we must drop the parasitic theory and go back to one of the many theories that were deemed satisfactory in the past and which have much to be said in their favor.

I was interested in this clipping from the newspaper:

"Chicago, May 5. Dr. Maud Slye, the University of Chicago research worker, who recently advanced the theory that cancer is inherited and not contagious, as a result of ten years' experiments with 11,000 mice, was awarded the Howard Taylor Rickett's prize by the faculty of the University medical school." What is recently and what is heredity?

The restraint view has a great deal in it and will bear a good deal more study than has been devoted to it in the past.

Now as to curability. Is immunity three years as we used to say? No. It is longer than that. When you get ten, fifteen and twenty-five years of immunity from a disease and the patient dies perhaps from some other condition you generally consider him cured. Any one here can easily report, even show you patients who are still living many years after removal of undoubted malignant disease, and are perfectly well without any recurrence. Now I believe that is not rare. I was taught many years ago that a very considerable number of cases of cancer of the breast were curable, a few even in the late stages and many in the early stages, if you did the proper operation. Age has little or nothing to do with the diagnosis of cancer. It has something to do with the fatality of the disease. I have known carcinoma of the breast in a female child of three and a half years, and I have known of carcinoma in other localities in many comparatively young people.

HOW THE STATE CAN HELP IN SOLVING THE CANCER PROBLEM.

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In a paper, read before the Medical Department of the University of Michigan, October, 1912 I made the statement that there should be added to the clinic a department for the study of cancer. "Everybody is dreadfully interested in cancer and this dread is made worse by the pessimistic view of physicians, with failure written on their faces. Just now the scientific world is engaged in the study of cancer as never before. We know that the future advancement in the treatment of this disease will not be along operative lines, but will rather be medicinal and associated with

laboratory findings. Nowhere in the State can this work be carried on so efficiently as by the combined forces of the University clinic. This work should be begun at once, not only for the advancement of knowledge, but for the protection of the people. This division of work should afford proper attention and relief as far as possible for the incurables."

Nearly three years have passed since the above paragraph was written and if I may judge from the lack of sentiment aroused by this advanced notion, it was of no particular value and did not excite comment from any one. So far as I know, no attempt has yet been made to place cancer on the list for investigation in the State of Michigan. During these years, thousands of people have died in the State of Michigan from cancer, some of whom had reached old age and were ready to die, but a number of them might have been useful for several years if the disease could have been held back or removed.

One reason why the State is so slow to recognize the necessity for investigating the cause and cure of cancer is that the disease is essentially one of advanced life. The patient has reached a period in life when he is supposed to have some knowledge of the laws of health and how to ward off disease, while most of the other diseases coming under control of the State Board of Health are essentially diseases of childhood and occur before the child has the requisite knowledge for guarding against disease.

The physician and the public have assumed, to a large extent, that cancer cannot be cured. The result is that the patient hides the condition from friends and physician alike, until it is too late to bring about much of a change. The family physician, while in doubt, temporizes and will not allow himself to be convinced that his patient has cancer until it is too late for operation.

In order to define this position clearly I will present some statistics concerning one phase of the cancer question as it appears in the Surgical clinic. This will represent but a small part of cancer cases coming to the Hospital appearing as they do in all clinical departments except that of pediatrics. I have taken cancer of the mouth and face because they present such peculiar accessible points of origin and are easily discovered. I have selected three representative years because I was able to secure quite full histories of the patients treated. In 1905-06 there were 23 cases of cancer of the

mouth and face. There were 11 cases of cancer of the jaw, two of which were operated and two were treated by X-Ray. There were two of the face operated and one not operated. There were 10 cases of cancer of the lip all of which were operated. During the year 1910-11 there were 38 cases of mouth and face cancer. There were 17 cases of cancer of the jaw; 11 of them were operated and six of them were not treated. There were 10 cases of cancer of the lip, six of which were operated and four not treated. Of three cases of cancer of the nose, two were treated and one was not. There were three of the tongue, two operated and one too far advanced for operation, and six of the cheek, two operated and four not operated.

For the year 1911-12 there were 37 cases. There were 14 cases of cancer of the jaw, six of which were operated and eight were not operated. There were 13 of the lip, 11 operated and two not operated and 10 of the face, six operated and four not operated.

This list for three years represents 99 cases. There were 47 cases of cancer of the jaw and only 19 of these were operated. Sixty per cent. of the cases of carcinoma of the jaw came too late for operation. There were 35 cases of cancer of the lip, 28 of which were operated. Fifteen per cent. came too late and cancer of the lip is so readily seen and diagnosed that there should be no temporizing about treatment. Some of these patients had tried the paste cure as employed by so called cancer doctors, which accounted for the hopeless delay. There were three cases of cancer of the tongue, two operated. Cancer of the tongue can be cured by early operation provided the patient is not syphilitic, a condition which is greatly against recovery in all cases of cancer of the mouth and face.

There were seven cases of cancer of the cheek only two of which were operated, 80 per cent. beyond operative stage when presented at the clinic. There were four cases where cancer involved the nose. One was operated and 75 per cent. remained untreated. The average age for the appearance of cancer of the mouth is about sixty years. The patients are mostly farmers or laborers and every case presents a dirty mouth. Not all are users of tobacco but the use of the tooth brush is almost unknown. In but few instances was there a history of cancer in the family.

During the years 1913-14, 144 cases of cancer were presented in the Surgical clinic, 76 of which were operated. Nearly one-half of the

patients came too late for operation and were sent away to die from a lingering disease, many of them without even the ordinary means for relief from pain and suffering.

According to these statistics one-half of the cases of cancer come too late for operation. Where do they go to die? A number of those who are operated will die from recurrence of the disease, some will pass away at home while others will have no place for care and treatment.

Ignorance and superstition account for the delay in seeking proper medical advice and this can be overcome only by education. The State should place in every house within its borders a pamphlet setting forth the early signs and symptoms of cancer and the value of consulting a physician about small skin and mucous lesions. The State should provide means of transportation to, and treatment in, a proper hospital for all poor persons so affected. It should provide a home for the incurables where they may be made as comfortable as possible for the remainder of life. It should provide and maintain a laboratory for research and the treatment of cancer to investigate those problems which are peculiar to the State and not necessarily of national importance. The natural place for carrying out these provisions by the state, is the University Hospital. It should be called the "Michigan State Cancer Hospital." This name should not be an advertisement but a guarantee to the people that the State has provided a place where any person may secure the best the medical profession has to give for an extremely fatal disease.

THE CONTRIBUTION OF THE X-RAY TO THE DIAGNOSIS OF ABDOM- INAL CARCINOMA.

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The problem of the early diagnosis of malignancy has taken toll from every method that offered any hope for a solution and X-Ray methods have received their full share of attention. Until the last few years, such efforts were more or less futile, and although in a few cases where conditions were exceptionally favorable, a well developed carcinoma had been demonstrated, the method did not deserve the expenditure of the necessary time and money. With better methods and better equipment, there has been developed a technic which furnishes much valuable information although the dream of a really early diagnosis has not yet been realized.

This is partly due to the nature of the disease itself. The radiographer has seen many cases in the last few years, but of these, few are really early. The onset of the trouble is so insidious that the patient does not present himself for examination until the disease is well advanced. If patients could be seen before the onset of any symptoms whatever, the methods at our disposal might be counted on to be of much greater service. Nevertheless there is a growing list of observed cases in which the diagnosis could be made with certainty only by radiographic means, and a much larger list in which the accurate determination of the location and the extent of the disease has been of no little service to the surgeon. At any rate a definite diagnosis may be made in cases which otherwise would require observation and in so far serves to advance our methods nearer the "early diagnosis" every one seeks.

The diagnosis of abdominal malignancy depends on the observation of changes in the form and function of the hollow viscera. Both of these presuppose a thorough knowledge of the normal and physiologic conditions.

The observation of an alteration of the form of the organ under examination depends on the ability to completely fill them, and is therefore confined to the examination of the stomach, colon, and in case of obstruction to the esophagus. The small bowel neither fills well, nor can its shadows be separated so as to give us an adequate idea of the continuity of its lumen, and direct examination is impossible.

Until recently the esophagus could be demonstrated only when an obstruction, complete or nearly so, allowed of a demonstrable filling of its lumen. Dr. Stewart has recently succeeded in showing the normal esophagus by having the patient swallow a length of sausage casing which has been closed at the bottom by a ligature and which is then filled by an opaque suspension from above. As applied to a partial obstruction, it has the great advantage of showing not only the upper level of the obstruction, but the lower as well, and giving a very good idea of the nature of the process from the character of the deformity. Carcinoma may be recognized in the vast majority of cases and the malignancy of an obstruction established.

Carcinoma of the stomach not only deforms the stomach shadow but also causes characteristic changes in the function. The deformity is in the nature of a defect in the stomach, that is, the growth prevents the filling of restricted areas we should normally expect to be filled,

and there is accordingly a defect in the stomach shadow. These defects are usually striking and pathognomonic. There are certain artifacts that need to be carefully excluded. The remainder of a previous meal may produce a false defect. More often, the difficulty arises from the presence of gas in the transverse colon or splenic flexure, either of which may be very deceptive. A homogeneous opaque meal is also a prime necessity.

In the absence of a definite defect, carcinoma may be suspected from the local failure of the peristaltic wave. By involvement of the circular fibers of the muscularis, the onward progress of the wave is interrupted. Usually, this involves the entire circumference of the mucosa at this point and the wave is not resumed distal to it. It not infrequently happens that no peristalsis of any kind is observed. This occurs principally with an infiltration of the lesser curvature just proximal to the pylorus, and it has been suggested that the principal nerves controlling peristalsis traverse this region.

An important group of suspected cases is those which show signs of old peptic ulcer. Surgical experience has shown the frequency with which these undergo malignant change. Unfortunately, there is no X-Ray evidence available which will allow us to differentiate. Nor can a small obstructing carcinoma of the pylorus be differentiated from the scar of an ulcer leading to a similar obstruction. In both of these cases we feel justified in recommending surgical intervention, being satisfied to demonstrate the anatomic conditions.

The most brilliant feats of diagnosis have been in the field of the scirrhus carcinomata. These are peculiarly insidious, lead to little or no retention and are particularly difficult to recognize by laboratory means. They invariably show extensive involvement and retraction. The stomach is reduced to a rigid narrow tube through which the opaque meal passes freely into the duodenum. There is no sign of peristalsis. A positive diagnosis may be based on these findings. Unfortunately, no early cases are seen.

Valuable information is furnished in the form of evidence of involvement of neighboring organs by metastasis, either by tumor as in the liver, or by adhesions as in the colon and small intestine. Such evidence is necessarily indirect and requires the use of the horizontal fluoroscope, which allows of "visual-palpation."

On the whole, we may say that the greatest value of the X-Ray examination of the stomach

obtains in the cases of carcinoma without obstruction. This follows directly from the fact that the clinical diagnosis depends in no little measure on the evidence of pyloric stenosis with its resulting fermentation.

Extragastric tumors may be recognized by the pressure deformities produced in that organ, and by pressure stenosis in the small bowel. Unless fixation or infiltration of either organ can be established, the diagnosis of malignancy must be presumptive since any cause of pressure might give the same signs. Most characteristic are the tumors of the head of the pancreas, which cause a displacement of the antrum of the stomach downward and a broad curved lesser curvature and a separation of the loops of the duodenum. They more often present above the lesser curvature than otherwise and produce early involvement of the transverse colon as shown by fixation or obstruction. Carcinoma of the gallbladder can rarely be distinguished from other enlargements of this organ unless metastases have occurred in the duodenum or hepatic flexure.

Similar findings hold for all tumors of the abdomen not primary in the gastrointestinal tract, and each case must be judged on its own merits.

With the proper technic, cancer of the colon except in its pelvic portion may be diagnosed with great certainty and much earlier than by any other method. The most valuable procedure is the injection of the opaque enema. There is no difficulty in injecting the entire colon to the cecum. The progress of the enema can be followed by the fluoroscope and the temporary arrest of the onward flow at a kink is promptly followed by a more rapid progress as soon as the temporary obstruction is overcome. In true obstruction however, the remaining bowel fills slowly and uniformly, the rate depending on the degree of stenosis. The site of obstruction is marked by a persistent filling defect, and often by a palpable tumor. For verification a pair of plates is usually taken which show in much finer detail and in greater contrast the defect already seen. Although simple in theory, in practice much depends on the physical properties of the opaque enema, which must be fluid enough to flow through the tube easily and viscid enough to hold the opaque salt in suspension.

Much the same information may be obtained by observing the progress of the opaque meal similar to that used for stomach examination. A serious difficulty often arises in distinguish-

ing between the normal colonic haustrations and the defects produced by a tumor in the lumen of the bowel. The procedure requires an observation at intervals over a period of two or three days, which is a serious objection.

Cancer of the rectum may be better studied by other methods and are rarely referred to the radiologist.

The radiologist is under no illusions as to the limitations of his method. Nevertheless, we believe that much valuable information is obtained in the routine examination of all cases suspected of abdominal malignancy. Doubtful cases not infrequently give pathognomonic radiographic signs, and clear cases may often be shown to be inoperable without an exploratory operation. When we know more in detail the significance of all we see, we shall be in a position to more rationally assist the surgeon to a selection of the proper treatment.

We feel certain that the radiographic method could establish the diagnosis of cancer of the stomach earlier, and with greater accuracy than could the internist, if the patients presented themselves for examination earlier. Certainly, the changes that are found with the onset of symptoms are exceedingly gross and could be recognized at a much earlier stage if we had the opportunity to examine them.

THE TREATMENT OF CANCER OF THE UTERUS.

REUBEN PETERSON, M.D.
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Just at the present time we are somewhat discouraged regarding the radical cure of carcinoma of the uterus. The reason for this has been brought out by the previous speakers, for in our clinic also the patients with cancer for the most part come too late for any sort of radical treatment. During the past year we have been able to perform only two or three radical operations for cancer of the uterus. The remaining patients with cancer, probably about twenty or twenty-five, have been subjected to palliative operations with the cautery according to the method advocated before this Society by Dr. Percy of Galesburg, Ill. For we feel that more can be gained for these patients who are far advanced with carcinoma of the uterus by this method than subjecting them to dangerous radical methods of removal where both primary and secondary results are very bad.

Thus more and more are we forced to admit

that the results of the treatment of uterine cancer depend upon the stage of the disease when the patient comes to the surgeon, and the conclusion is forced upon us that so far as treatment is concerned the results will never be any better until a plan has been devised and put in operation whereby patients with uterine cancer can be operated upon earlier.

Dr. Darling ought not to be discouraged because he gave an address about cancer and got no results from suggestions contained therein. We have all had the same experience, not once but many times. I have been preaching early diagnosis and operation for uterine carcinoma in papers read before local, state and national associations for years and I have seen but little good results from my efforts, and my experience is similar to that of other gynecologists. So we are forced to conclude that our methods are wrong and if that be true the only thing to be done is to change these methods. Not only must the physicians be convinced that cancer in almost all parts of the body can be cured by early operation, but this fact must be driven home to the public. How is this to be done? The American Society for the Control of Cancer is trying to solve the problem by a campaign of publicity along the lines adopted by the National Antituberculosis Society.

What can be done by publicity is illustrated by the work of Winter of Koenigsberg. He employed all legitimate means of placing certain facts about cancer before the public. He circularized the patients at the hospital clinics, he placed pamphlets on cancer in the hands of physicians, nurses and midwives. In other words he preached in season and out of season that cancer taken early enough could be cured and set forth in simple language the early symptoms of carcinoma, especially of the uterus. As a result of his campaign he was able to operate radically upon 90 per cent. of patients with carcinoma of the uterus while in this country we can thus operate upon only 10 to 20 per cent. of the cases.

The statistics of the previous speakers have been as dismal as my own. It all points to the same thing, we must change our methods, not of operating but of publicity. Dr. Darling's suggestion of a State Cancer Hospital here is a good one, for it would not only do a great deal of good to those far advanced in the disease but it could be used as a center for placing before the people of the state facts regarding early diagnosis and treatment of cancer whereby many lives might be saved yearly.

Now just a word about the treatment of cancer by radium. Recently in the pathologic department of the University of Nebraska Medical School at Omaha, I was privileged to see slides of a cancer of the cervix before and after treatment by radium. The latter certainly had destroyed the carcinoma but that it will do this has been known for a long time. But whether such treatment is lasting remains to be seen. Certainly reports from the radium institutions abroad are not very encouraging except with cancers of the skin. However, I am in favor of the continuation of these experiments for we are all willing to be convinced. But while this is going on we must continue to use the knife as often as it holds out any hope of cure. It is of far more importance to bend our efforts to so educate the people that they will recognize the symptoms of cancer early and consult their physicians without delay than to pin our faith upon an agent too expensive for general use which may finally fail to show good permanent results.

CANCER OF THE NOSE.

R. BISHOP CANFIELD, M.D.

ANN ARBOR, MICHIGAN.

In the records of the last 11,200 cases appearing in the Clinic of Otolaryngology there appear fifty cases of malignancy, or one in two hundred twenty cases. Of these, twenty-two were primary in the nasal interior or one in five hundred cases. Of these twenty-two cases, twelve were squamous cell carcinoma, three were basal cell carcinoma, one was medullary carcinoma, one was endothelioma carcinomatosum, one adenocarcinoma, one was osteosarcoma, one was small round cell sarcoma and one was spindle cell sarcoma. Eighteen were males and four were females. The youngest was a man of 22 and the oldest a man of 70. The average 48½ years. In but three of the twenty-two cases could the growth be determined to be primary in the nasal chamber. In two of these the left inferior turbinate and in one the septum was the site of the disease. These last three were squamous cell carcinomas.

In this series of cases, the only complaint was that of nasal obstruction as long as the growth was confined to the nose and accessory sinuses. In no case was pain a marked symptom nor was loss of weight noted until late in the course of the disease. In but three cases had extension taken place in the brain and in no case could involvement of the lymph glands be demonstrated until after the growth had

broken through the bony walls of the nose or sinuses. Metastasis was not noted in any case. In other words, the above series supports the statements that malignancy of the nose and accessory sinuses is unaccompanied by symptoms referable to the character of the growth and causes but slight inconvenience to the patient as long as the growth is confined to these regions. When, however, the lateral wall of the nasopharynx is the site of disease or when the growth has destroyed the bony walls of some one of the sinuses and appeared in the soft tissues of the neighborhood, then and, as a rule, not until then, do anemia and cachexia occur.

Observation of the tumor and the character of its growth very early leaves no doubt of its nature. The vegetative character of the cells, the rapidity of growth, the peripheral extension with lack of capsul and infiltration, the tendency to central degenerative changes and the liability to return after removal, which characteristics Adami gives as the essentials of malignancy, all are noted early. While certain tumors, notably the hard fibromas of the nasopharynx which primarily show only malignancy of the second order, that is, the malignancy of position, frequently develop malignancy of the first order as outlined by Adami, the malignant tumors of the nose as a rule are essentially malignant from the start, both pathologically and clinically.

Of the above twenty-two patients fifteen were operated upon. In the following eight cases a definitely good result was secured:

Two cases of carcinoma of the inferior turbinate, well at the end of three months and seven months respectively.

One case of carcinoma of the septum and inferior turbinate, well at the end of nine years.

One osteosarcoma of the antrum (treated with Coley's serum), well at the end of twelve months.

One endothelioma carcinomatousum of the frontal sinus, ethmoid and orbit, operated with sacrifice of the eye and exenteration of the orbit, well at the end of seven years.

One basal cell carcinoma of the vestibule, well after three and a half years.

One squamous cell carcinoma of the right ethmoid and orbit, well at the end of three and a half years (operated with sacrifice of the eye and exenteration of the orbit).

One carcinoma of the nose and vestibule, well when last heard from, operated four years ago.

The above small number of cases offer some support to the opinion that malignancy of cancer of the nose is relatively somewhat rarer than that of cancer of other parts of the body as long as the growth is confined to the nasal interior and accessory sinuses and that radical and early operation offers a relatively better prognosis.

DISCUSSION.

DR. HAROLD I. LILLIE: It gives me great pleasure to take part in this symposium upon a subject of such paramount importance. Everyone's experience seems to be that the only hope lies in early diagnosis. That is shown in our experience of cases in which two that were operated where the carcinoma involved the turbinate, have gone to recovery and there are no signs of metastases. Dr. Canfield believes that these growths start in the accessory sinuses. Of course, authorities differ. Some believe that the middle turbinates are the places first attacked. The two cases which we have had during the last six months involved the posterior end of the inferior turbinate, a very rare position. It is usually the free margin that is attacked first. So if one is able to recognize the change before it spreads to the lateral wall and into the accessory sinuses where the membrane is continuous with that of the lateral wall, there is a chance of permanent recovery. Although these are very recent cases, still the scar which is evident now, and the patient is under observation each week, is clean and without signs of recurrence.

There are three types of carcinoma which usually occur in the nose, the basal cell, squamous cell and the adenocarcinoma. Of these the adeno and basal cell type are the least malignant. The squamous cell resists all therapeutics, operative and otherwise, unless it is attacked before it spreads to the lateral nasal wall. In such instance it usually involves the accessory sinuses and nothing but the most radical operation is of any avail. So in accordance with nearly everyone's experience the only hope in intranasal carcinoma lies in early recognition before it has spread to the mucous membrane within the accessory sinuses.

The Electro-Chemical Ring.—A post office fraud order has put a stop to the sale of this silly contrivance. This ring, put on the market by the Electro-Chemical Ring Co., Toledo, Ohio, was found to be made of ordinary iron. It was claimed to cure diseases caused by acid in the blood, among which were stated to be Bright's disease, diabetes, epilepsy and cataract (*Jour. A.M.A.*, April 10, 1915, p. 1263).

Olivine.—Olivine was a liquid soap put on the market by the To-Kalon Manufacturing Co., Syracuse, N. Y. It was declared misbranded under the Federal Food and Drugs Act because, contrary to claim, it was not made from olive oil, because boroglycerine was absent and because it had neither antiseptic or germicidal action (*Jour. A.M.A.*, April 17, 1915, p. 1346).

The Journal

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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July

Editorials

TUBERCULOSIS DAY.

As you may have noticed in the June number of the State Journal, the Tuberculosis Committee of our Society has decided to ask the members to set aside a day in the month of August as a date on which each physician will either devote his time and services without financial recompense to the physical examination of such individuals as present themselves before him with regard to the presence or absence of tuberculous disease, or will furnish applicant with information concerning where such examination may be obtained in that locality.

The Governor of the State has issued a Proclamation setting aside Friday, August 20th, 1915, for this purpose.

The State Medical Society should and does stand for the highest ideals of preventive medicine and has in the past conferred honors upon its individual members especially engaged in this line. Here is a work which we trust will be of more far-reaching value than anything previously undertaken by any medical society along the lines of the prevention of disease. It is to be the work of no one individual but of the State Medical Society as a whole and as such should add greatly to the renown of our organization throughout the country.

We trust that you will personally assume the responsibility for the work in your County. We would suggest that you have mayors and common councils throughout your section, issue special proclamations setting aside this date.

We have drafted examination blanks to be used by the individual physician and the same will be forwarded to you shortly for distribution among the members of your County Society. It is requested that these blanks be returned to the Committee by August 23rd in order that the results may be tabulated and presented as a survey before the meeting of the State Medical Society at Grand Rapids, August 29th.

The work undertaken will if thoroughly carried out be the most important thing yet accomplished in connection with the subject of Tuberculosis.

Trusting that you will take a personal interest in the matter and bring the same before the attention of your society at its next meeting, we remain,

Fraternally yours,

Tuberculosis Com. of State Medical Society.

THE RELATIVE MERITS OF THE STATE HOSPITAL AND THE COUNTY HOSPITAL FOR THE TREATMENT OF THE ADVANCED CASES OF TUBERCULOSIS.

In 1907 the State Sanatorium at Howell was opened for the reception of incipient cases of tuberculosis. It was then thought that at no distant day provisions would be made for the treatment of advanced cases at this institution; but the popularity of the move for County and Municipal hospital-sanatoria seems to have over-shadowed the original plan and in 1909 the Legislature passed an Act providing for the establishment of County Sanatoriums and again in 1913 an Act was passed providing for County Hospital-sanatoriums.

This wise legislation, so far as its provisions are carried out, has placed the hospital-sanatorium among the people who require it. Patients and their friends more readily avail themselves of its advantages because it is near at home where they may receive frequent visits from friends and may more conveniently visit their homes. Especially is the local county or municipal hospital-sanatorium suitable for the

care of those acutely sick and for the advanced cases of tuberculosis. They are saved the long journey and the feeling that they are being sent away from home and friends. It is possible to secure hospital care in many cases at the home institution where it would be impossible to send them away. Many more cases can be brought under the influence of the sanatorium than would be possible to provide for by the central state institution.

Whatever the State Legislature may wish to do for the relief of the advanced cases of tuberculosis should be done by encouraging and lending support to the County Hospital-Sanatorium.

A. H. ROCKWELL.

FEEBLE MINDEDNESS IN MICHIGAN.

The study of feeble mindedness is always fraught with many almost insurmountable difficulties. First it requires investigators with talents of a peculiar and rare type. Having found such a one he must undergo a considerable apprenticeship and training before he is competent to undertake such a task. Thereafter it demands the expenditure of an immense amount of time, patience and labor in order to obtain satisfactory results.

Attempts have been made along many lines to find a measure which can be applied to all cases, and which will correctly estimate mental capacity. Most of them are unsatisfactory, disappointing and inadequate. The "Binet" test, up to the present time, is perhaps least objectionable of all the methods used, and it is satisfactory only in skilled and experienced hands. The author of this test has arranged series of questions for children of every age and in different walks of life. The tests which are given to a child of say eight years, for example, are such as any normal child of his age should reasonably and readily meet. They are so arranged as to furnish a basis for determining whether the powers of observation, of judgment, of memory and of reasoning are up to the average of this age. If the child fails to meet these requirements in knowledge and in promptness, he is subjected to lower and lower age tests until one is found where he can qualify within the time required. Thus if a person under test cannot respond correctly, and in the average time to a list of questions more complex than that required for a normal child of seven years, he is classed as having the mentality of

a child of seven, though he may be 50 years old. While this will give a fair idea as to the intellectual attainments of the subject, it does not by any means furnish an insight into the moral side, and moral imbeciles constitute a well recognized type of the mentally deficient.

Feeble mindedness as it is called, arises from failure in cerebral development—usually from birth—so that the subject fails to approximate the normal for his age or his social and intellectual plane. Davenport says that "Feeble mindedness is a deficiency in some socially important trait." If he has never developed in intellectuality beyond that of a two year old child he is said to be an idiot. If he has developed more than this but has not exceeded that of a child of 7 years of age he is classed as an imbecile. If he has however developed beyond the seven year age, and is still below normal on account of some early cerebral defect, he is classed as a moron.

While the idiot and imbecile require constant care, the moron may be quite able to care for himself after a fashion, and for a time at least to earn some sort of a living. The first two classes cause the most trouble although not a menace to society, for excepting in isolated cases they do not propagate. It is the moron group which threatens society so seriously. Formerly they received but scant consideration and care and they succumbed readily to disease. Now-a-days with improved hygiene and better medical attention most of them seem to survive.

The most advanced and scientific effort to place the study of the feeble minded on an intelligent basis is to be seen in the establishment of the "Ohio Board of Administration." This board has just been created to study individually every delinquent and in fact every child who is backward or wayward, or who needs guardianship or institutional care in the state of Ohio.

The cause in every case of delinquency is to be ascertained and the probable outcome of the delinquent under proper surroundings and care is to be estimated. Those who possess inherent mental defect, and who are therefore incurable, are to be separated from those whose shortcomings are dependant on deficient moral or social organization, and which are susceptible of correction through education and training. Thus baneful influences are removed from those most likely to be injured thereby, giving them every chance for development. Private homes are to be sought for suitable cases. Segregation is to be enforced for those who are really

defective. Reform schools are to be used only for those who can be reformed, and such children will not come in contact with unreformable defectives and degenerates. The separation of these different classes is to be carried out only by specially trained workers.

While it is recognized that there is a relationship existing between unfavorable environment and low mental endowment, the poor environment is more likely to be due to the low endowment than otherwise. Degenerates have no high ideals—no ambitions and few aspirations. They do not care to create good environment, and wouldn't appreciate it if they had it any more than a pig would appreciate a napkin. They naturally seek and associate with their kind, therefore the deficient children of such parents are usually raised amid miserable surroundings.

We must not forget several of the fundamental laws of heredity.

First: That two mentally defective parents produce only defective offspring.

Second: That one-fourth of all the children of one defective and one normal parent are degenerate.

Third: That no imbecile is born except as it inherits the ancestral weakness either directly or indirectly from its parents.

The "Report of the Commission to Investigate the Extent of Feeble-mindedness, Epilepsy and Insanity and other conditions of Mental Defectiveness in Michigan" presents the state of our feeble minded in a clear and comprehensive manner, and exposes conditions which are all but incredible in a so-called civilized country. It is a pity that every citizen in the state, and especially every legislator does not read the entire report.

This report states that there are known to be in the State Hospitals for the Insane in Michigan 353 feeble minded individuals. In the County Infirmaries there are 710, while in the Industrial Schools there are 302 more who are known to be feeble minded. Township reports further add 481 to those already mentioned, not including fifty feeble minded women of child-bearing age who are on the waiting list at Lapeer. This makes a total of nearly 2,000 recognized feeble minded individuals in this state. Most of these feeble minded are *not* permanently interned. For instance there are 133 feeble minded girls who will be discharged from the Industrial School at Adrian when they reach 21 years as well as fifty women of child-bearing age on the waiting list at Lapeer.

Besides this are the 137 women of child-bearing age in the County Infirmaries and the 127 women of like age reported by the various townships. This makes a total of 447 known feeble minded females in the active stage of life who are practically free to go and multiply as they please—and as a rule such persons have a *penchant* for reproduction.

Worse than all this, there are actually examples where county and other officials have permitted and actually encouraged these poor unfortunates to go forth from public institutions and get married. And what is more, it is frequently found that from ineffectual segregation children are born from feeble minded parents right inside the public institutions of our state, thus adding to an already heavy burden, and these defectives are permitted to go forth in turn, without restraint, free to reproduce more of their kind.

The actual cost to the state is no inconsiderable amount in itself. In fact it is almost beyond estimate and is steadily and rapidly on the increase. There is a record of two feeble minded persons and their descendants who have already cost the state \$17,000, while the celebrated Juke family itself has cost the great state of New York millions of dollars, and the trouble has only just begun.

The United States supports about one half a million defective persons and over 100,000 paupers at a cost of more than \$100,000,000 per year.

Until this state takes strong hold of this situation and firmly and positively insists on the absolute segregation of the feeble minded element in its population, and strenuously forbids its reproduction, this menace will continue not only as a fruitful source of danger but also as a positive burden and expense to the taxpayers themselves.

The recommendations made by the members of the Michigan Commission are exceedingly good. They are considerably in advance of the time, but there is so much common sense in them that one can but hope the public may soon become sufficiently educated to appreciate them.

WESLEY TAYLOR.

MEDICAL SOCIETY AND THE PUBLIC.

The primary purpose of the county medical society was correctly stated in the transaction of the Litchfield County Medical Society of

Litchfield, Mass. in 1784 as written by Dr. Osler.

"This society was formed on the most liberal and generous principles and was designed first, to lay a foundation for that unanimity and friendship which is essential to the dignity and usefulness of the profession to accomplish that which they resolved; secondly, to meet once in three months; thirdly, that in all cases where counsel is requisite they will assist each other without reserve; fourthly, that all reputable physicians in the county who have been in practice one year or more may be admitted members; fifthly, that they will communicate their observations on the air, seasons, and climate with such discoveries as they make in physic, surgery, botany and chemistry and deliver faithful histories of the various diseases, incident to the inhabitants of this country with the mode of treatment and event in singular cases; sixthly, to open a correspondence with the medical societies in the neighboring states and in Europe for which purpose they have a standing committee for the purpose of examining candidates for the profession and to give certificates to the deserving."

Conditions have changed somewhat but the main purpose for which a medical society was organized has been mainly for the development of the profession individually and collectively.

The code of ethics which has been the doctor's bible since the time of Hypocrates does not reveal to us our responsibility in the public affairs of our respective communities other than medical; nor do the constitutions and by-laws of our own societies mention anything concerning our public responsibilities as a whole.

Medical men of long ago considered their duties well performed when they treated the sick. The people thought that the physician wandered from his sphere of activity when he discussed politics or religion, or when he attempted to invest his few extra dollars in some commercial enterprise to help increase his income. No doubt but that the early medical training had something to do with this. With the increase of requirements for admission to medical courses and of medical training the medical graduates should have the fundamentals of many phases of human activity; should develop in the individual sound judgment, consecutive thinking and an open mindedness that dominates the activities of the great majority of medical workers. Thus, when this characteristic prevails unfettered and when the studious activities continue after graduation in the medical representatives of any community these men should wield a powerful influence in the study and correct interpretation of municipal problems, sociological condition, educational administration and religious propaganda. In-

dividually if the physician assumes the aggressive spirit and utilizes his capabilities he can influence the attitude of his patients to a greater degree than any other person because he does command the confidence and respect of the people he serves. Our medical societies in the great majority of instances at the present time are composed of men who have sincere concern as to the conduct of municipal affairs and they are not sitting on the side lines and sleepily gazing on while the turmoil continues unabated. They are actively in the midst of the battle and the people are looking to them for guidance. If the component elements of medical societies are thus active in public business why should not the medical society hold special meetings if necessary to discuss our non-medical affairs and put ourselves on record as to our attitude on these questions. Some of the membership believe that a medical society should not express itself as to its opinion on public issues; that it should confine its activities to the practice of medicine. Of course if the society as a group of individuals wish to think nothing, do nothing, be nothing and become mummified and petrified in medical issues only and focus its efforts on a sphere of activity, like a hole in a board, just because of precedent and tradition then it must eliminate all interests non-medical. However, we are human as mortals go but our training, if it has performed its mission as it should, has broadened our horizon to include all the activities of human life; it has enabled us to lift from our shoulders the mantle of precedent mysticism and tradition and has fired us with a desire for truth as we see it. "Service is the one key to success in life. The only free man is he who is free to give and is ever giving tireless, personal service to his fellow men. To give of your wealth is not enough, to give of your possessions is not enough, for these are not you. Only then do you satisfy your debt to the race that has borne you like a mighty current from eternity to now, to the Power that has fashioned you when you give yourself abundantly and unreservedly." This is not only applicable to medical men individually but collectively.

The County Medical Society has a public responsibility, a great mission to perform in an aggressive not perfunctory manner and the Society should not shirk this duty. The people will respect the Society and honor the individual members the more greatly for such an attitude. The people will lend aid and influence that is indispensable when the State Legislature

is considering medical legislation. In the time of some epidemic of infectious disease the profession will be more closely cemented and rigid quarantine can be more efficiently maintained if the local medical society manifests an interest in public affairs in every way possible; especially will this prove true if a committee on Public Health and Education is active in the education of the public in medical issues that vitally concern public welfare. One great factor in this public education propaganda is a bulletin of the County Medical Society mailed to public spirited citizens of the community. The County Medical Society teems with potential energy to be rejuvenated or regenerated for the development of its membership, for the education of the public on medical issues and for bringing about a friendlier basis for co-operative work between the public and the profession.

C. B. FULKERSON.

CENTRAL STANDARD TIME.

Detroit, after an agreeable period of dormancy, has resurrected the old problem of time and on May 15 adopted Eastern Standard time to govern their social and commercial activities.

Detroit's action would be of little moment to the remainder of Michigan were the endeavor not being made to induce the rest of the state to adopt Eastern Standard time. Such an effort is uncalled for and presumptuous.

The excuse given is, "more day light." Authorities tell us that the change provides approximately but 42 additional hours of daylight in the year. This is the only advantage derived. Is that advantage sufficiently great to over-ride the disadvantages, confusion of time with other communities in the state, railroad schedules, weather bureau observations, legal acts, which by legislature enactment has established a legal time for Michigan?

Our present system of time, Eastern, Central, etc., has been in existence but forty years. Its adoption was brought about by the weather bureau. Forty years ago there were some seventy different standards of time in the United States and necessarily there existed seventy confusions. A satisfactory system was arrived at. It met all conditions. Why change back to the old regime?

If more daylight is demanded, why not cause the laboring day to commence at 6 o'clock and end at four? Such a plan would secure the forty-two hours of daylight and not disarrange

the system which has a nation wide bearing upon commercial, legal and social activities.

The Detroit Medical Journal invites the attention of other cities and municipalities to fall in line with Detroit. It states that the citizens and profession of Detroit are satisfied. We would respectfully suggest that in this present era of modern enlightenment with its facilities of intercommunication, commerce and business exchange, that the day is long past when a community exists only unto itself. To-day there is an interdependence, an interresponsibility that extends beyond the boundary of circumscribed domains. Detroit is dependent upon Michigan as much as Michigan is dependent upon Detroit, to a certain extent. Detroit then has retrograded and is working a disadvantage upon the commonwealth of Michigan in adopting an Eastern Standard of time. We prophesy its early return to Central Standard time.

HOTELS.

Ample hotel accommodations for those attending the Annual Meeting in Grand Rapids are assured. Herewith we impart a list of the leading hotels.

New Pantlind Hotel, Headquarters	\$1.50 up.
Morton House	2.00 up.
Hotel Cody	1.50 up.
Hotel Mertens	1.50 up.
The Crathmore	1.50 up.
The Eagle	1.00 up.
The Herkimer	1.50 up.

These are all first class hotels, conducted on the European plan and capable of caring for at least 1,200 visitors. They are centrally located and are all within five blocks of the meeting place. The new Y. M. C. A. building will also be able to care for a limited number in its new dormitory.

To avoid all eleventh hour confusion we suggest that you write and make your reservations at least 30 days in advance.

Editorial Comments

The dangerous man is he who has tuberculosis but does not know he has it.

"Consumption" is a disease full of deceptions. Those on whom it has fixed its grasp deceive themselves, especially in its early stages, by refusing to believe they have it at all. It is the irony of the malady that it snares its victim first, then turns the victim into an ally. First

he is to be pitied, then feared. For one intelligent, careful sufferer, who tries to shield others, there still are scores who are a public menace.

The consumptive who is in the final stages and knows it is seldom dangerous. He is a marked man; bed-ridden, shut off from others. But the man who has been infected and who ignorantly walks the streets—the thousands who harbor the germs in their systems and continually give them off to other people—these are dangerous. Because tuberculosis slays more than any other disease we should combat it as we would smallpox or leprosy.

It is the early stages of the disease which constitute the most perilous period for the victim and for society. Instead of seeking medical aid or taking diligent health precautions, he goes on his way in blissful unconcern. He infects others and he re-infects himself, inhaling or swallowing back into his system the death-laden bacilli.

Forewarned is forearmed. It is the common duty of every apparently healthy person to take account of possible early symptoms of this plague and stop growth of the bacilli before they get a good start. When a cold "hangs on," catarrhal symptoms are followed by lassitude, light fever late in the day, night sweats, pains in the chest, loss of appetite, or persistent coughing, then one should consult a physician. Even persons in full health may well be examined twice a year, just as they consult the dentist or have their watches cleaned regularly. Only such precautions are insurance against the White Plague in all its forms.—G. R. Press.

An appearance of ruddy health does not exclude tuberculosis.

The August issue will be a Grand Rapids number. In it the reader will find as full as possible announcement of the entire proceedings planned for the 50th Annual Meeting to be held Aug. 31, Sept. 1, 2. Please bear in mind these dates.

In any patient with constitutional symptoms, no matter of what he complains, the possibility of tuberculosis must be kept constantly in mind.

The Tuberculosis Committee's request to you to aid them in causing Tuberculosis Day to bring about a group of tubercular statistics of Michigan is deserving of every physician's co-

operation. It isn't too much to request you to render this support in the endeavor to lessen the prevalence of tuberculosis of Michigan.

Constitutional or general symptoms lead us to a diagnosis of tuberculosis, while the localizing symptoms point out the organs involved.

The advertisers of this issue have a message for every reader. They are presenting to you remedies, supplies, etc., that you require in your daily work and home life. If you desire to continue the standard of *The Journal* it is more than essential that you assign them your patronage.

Your patients, your friends, your family are as prone to contract and develop pulmonary tuberculosis as hundreds of others.

The Governor has signed House Act No. 64 which provides for the examination, registration, regulation and licensing of Chiropractics under the auspices of the State Board of Registration in Medicine.

The importance of physical examination in the diagnosis of pulmonary tuberculosis has been over emphasized.

Symptoms are a better and more accurate guide to activity than physical signs.

Symptoms without physical signs demand treatment while physical signs without symptoms require only careful watching.

From present indications the 50th Annual Meeting promises to be the largest meeting in the history of the Society. He would be indeed an unfortunate one who neglected or failed to be listed among those in attendance.

Failure to interpret rightly significance of symptoms, to detect the presence of abnormal physical signs, can be condoned; but failure to ask for and examine the sputum repeatedly in any patient with chronic cough is inexcusable.

The AlibenA Water advertising in this *Journal* has been approved by the Council of Pharmacy of the A.M.A., and it briefly outlines some of the excellent qualities of this American Natural Water. The AbilenA Company will gladly send you a quantity of this water for personal or clinical trial upon request.

EDITORIAL COMMENTS.*

The very first objective sign of tuberculosis that one can demonstrate is usually a limitation of motion in the joint, due to a spasm of the muscles around the joint, and we cannot say enough and cannot hear enough about this sign. It is, of course, a reflex spasm of the muscles which nature produces in order to immobilize the diseased and painful joint. It is the most misused and misunderstood of signs. It has nothing to do with ankylosis. Motion may be free and painless through nearly all of its range, except perhaps at the extreme limit of flexion or abduction or extension or rotation.

When a child has beginning tuberculosis of the spine, the first symptom the parents usually notice is that the child holds the back stiffly, and so the mother says it cannot possibly have anything the matter with its back because it holds it so straight. She thinks the child must be all right, and cannot have anything the matter because he walks like a little major. When you drop something on the floor, instead of stooping over he will, if it be in the lower dorsal and upper lumbar region, pick it up without bending the back. This instinct protection of the joint is the most valuable sign we can have in the diagnosis of tuberculosis of the joint, and it is one almost invariably neglected. Ask the average practitioner what the signs of tuberculosis of the spine are, and he will say kyphosis, the hump and cold abscess. We have many cases every year which never have a cold abscess. We have a good many that never develop a hump, and yet they are just as typical cases of tuberculosis of the spine as anything can be when the child is laid face down on the table.

While the child is being held in this way, the fingers of the other hand, pressing up and down the spine along the erector spinae muscle, will detect a certain feeling of tension of the muscles due to spasm. They are protecting the painful spine. These two signs in the presence of a positive von Pirquet reaction, to which I attach a great deal of importance, will make it necessary to consider the average case of this sort, with a chronic history, with a usually painless development of stiffness of the back, almost certainly a case of Pott's disease. We do not need to wait for a cold abscess or a hump in the back in Pott's disease, or for flexion and deformity of the hip to make a diagnosis of hip-joint disease, and it is enormously to the advantage of the patient if we can make a diagnosis and institute treatment before there is fixation or marked deformity or destruction. This is pre-eminently so in Pott's disease, because, with our present method of treatment by artificial ankylosis of the spine by means of a bone splint or by means of cutting through the spinous process and the laminae and making an ankylosis after the method of Hibbs, it is possible to cure a child of tuberculosis of the spine with no deformity whatever; and not only have they no deformity, but they will not get any deformity, so far as our experience of three years is concerned.

*Editorial comments extracted from published articles by Drs. A. P. Francine and E. W. Ryerson.

What help does the X-Ray give us in the diagnosis of tuberculosis? In small children it can give us absolutely no help, because we must remember that in small children the epiphysis, the head of the femur, for instance, is not shown at all in a child at an early age. The head of the femur is cartilaginous and soft, and the X-Rays pass readily through it. The only thing that we can see is a little centre of ossification, and it is useless to try and size up a hip-joint tuberculosis in a small child by the X-Ray appearance. The entire head of the femur may be destroyed except a little osseous centre or centre of ossification that may happen to be the only part of the head of the femur that is not destroyed, and yet the X-Ray will not show it. It is only in the older cases or in those cases with wide destruction that we can depend upon the X-Ray picture.

Infection takes place from close personal association or contact with open tuberculosis, as by living with a consumptive or living in a room or house contaminated by a consumptive. The great source of the infection lies in the carelessness of the individual consumptive in contaminating his surroundings, by spitting about or not properly disposing of his sputum; or by spray infection from coughing (equally dangerous) without guarding the mouth with a paper napkin. His towels, bedding, table utensils, etc., are also a source of infection. The period at which a consumptive is most dangerous covers, of course, the second and third stages of his disease when the lung is breaking down and the sputum contains large numbers of living tubercle bacilli.

Milk and meat from tuberculosis animals also constitute a source of infection. Infection from cow's milk has been variously estimated as being responsible for from 1 to 10 per cent. of cases in infants. Infection may also be hereditary, the direct transmission of the tubercle bacillus taking place from mother to the fetus by placental circulation. This has been shown to occur in mothers with advanced pulmonary or miliary tuberculosis, but has recently been shown as also possible where the lesion in the mother is in the incipient stage or even latent or non-active at the time of the birth. (Warthin).

All authorities admit that at least 75 per cent. of the population will react to tuberculin. From post-mortem findings, evidence has been clearly accumulating as to the frequency with which the disease is found at necrosy among the poorer classes; and, with increased refinement in postmortem work, the percentages are getting significantly greater. Gageli reported definite signs of tuberculosis in 97 per cent. of all bodies examined consecutively. Hamburger, reported postmortem findings of 63 per cent. with tuberculous lesions between the ages of seven and ten years of age. Gohn's postmortem statistics from St. Elizabeth's Hospital in Vienna show that by the end of the third year 6 to 8 per cent. are infected, the percentages rapidly rising until by the fourteenth year the infection reaches 92 per cent.

It may be stated as a fact that tuberculosis is the most common infection of childhood, and, as well

pointed out by Philip, we must get rid of the artificial distinction between so-called medical and surgical tuberculosis. From the scientific standpoint, the most slender seedling of tuberculosis is potentially significant. It is impossible to say which tuberculosis seed will be cast off and which will mature. Inoculation may occur through the mucous membrane of the gastro-intestinal or respiratory tract, or the skin, and whether it will spread from the lymphatic system, which is the first site of this early infection, and develop into pulmonary tuberculosis later, depends largely on the child's vitality and resisting powers through its living tissue cells, and upon its environment. In other words, this quality of natural or acquired immunity may hold the infection dormant; may heal an active lesion in its incipency, or localize it in the glands or bones; or may give way with resulting meningeal, miliary or pulmonary involvement. The course of events which supervenes, is dependent largely on extraneous circumstances, on the amount and character of the tuberculosis infection, on the number and character of the acute infection to which the individual is exposed; on enforced environment and to considerable extent on inherited qualities.

The problem of prevention to be effective, even as limited to the medical aspect of the communicability of tuberculosis, must not only take into account the care and isolation of the consumptive himself, but also the care and development of the children who have already been infected or who may be exposed to infection, and probably the development of a specific racial immunity. But when we consider as essentially one, as we must do, the two broad phases of the problem, namely, the social and economic conditions, and the more strictly medical conditions responsible for the prevalence and spread of tuberculosis, the point previously emphasized is brought forcibly upon us—how very apparent is the interdependence today of the tuberculosis campaign and all efforts looking to the common welfare. Let me repeat, that it is not alone from the strictly antituberculosis campaign that we may confidently expect to control tuberculosis, but from all allied movements looking to improvement of the health, morals, or conditions of the people. Folks says: "If our task is the more difficult because it is bound up with every phase of civilization, it is equally true that every substantial advance in other lines assists our cause."

It is apparent that the movements against infant mortality venereal diseases, alcoholism, the infectious fevers, cancer, procreation of mental defectives; and the correlated campaigns for better housing conditions, better hours and conditions of labor, child welfare work, etc.; all these movements, public or private, of whatever scope and by whatever methods they proceed, are all working to a common end, the welfare of the race, and as such are prototypes and allies of each other and of the greatest of them all, the tuberculosis campaign. They are all campaigns of preventive medicine, based on scientific development and attempting, largely by education, to carry the message of health and right living into the homes and very hearts of all the people.

The problem of eradicating tuberculosis is to combat the drift of the times, to raise through education, sanitary laws, hygienic and philanthropic effort the proletariat from their condition of dense ignorance and poverty, to enable them to get suitable homes, and teach them how to live and manage them.

Absence of tubercle bacilli in the sputum means only that bronchial ulceration has not occurred.

Patients who present themselves for examination frequently complain of symptoms commonly spoken of as "stomach cough." Disease of the stomach is not associated with cough. On questioning the individual we find that the stomach symptoms are limited to an attack of vomiting as the end process of a violent attempt to expel tenacious sputum from the respiratory passages. These individuals on close questioning will admit that their vomiting is always preceded by a violent coughing paroxysm, and that they feel no nausea such as is associated with attacks of vomiting arising from gastric disturbance itself. They further state that they do not feel an aversion to food and would be perfectly capable of partaking of a good meal immediately upon the cessation of the vomiting attack. The terms "stomach cough" is a misnomer and should never deceive the intelligent physician.

The disease is practically always more extensive than the physical signs indicate.

The state of Michigan has declared war, not against its fellow men but against a powerful and implacable enemy of all mankind. Every citizen is called upon to do his duty and we as physicians possessing special knowledge of the character of the enemy, its hiding places and manner of attack are in duty bound to take our places in the front ranks and do scout duty in order that we may ascertain the strength of the enemy and the distribution of its forces. Michigan has the lowest death rate from tuberculosis of all the states of the Union in the registration area with a single exception of the sparsely settled state of Utah. Michigan can be the first to drive this invader from her territory.

To L. Brown, M.D. Journal A.M.A. June 12, 1915, credit is given for extracts printed in italics.

Correspondence

Detroit, Mich., June 1, 1915.

To the Editor:

In answer to Dr. Wood's request to frankly state what caused the trouble, I will say that the tying of the appendix (evidently with catgut, although it is not stated so) was the cause of the whole trouble. If the stump would have been buried with a Lembert, it probably would not have occurred. Some people eat up catgut very fast, before good adhesions can take place. The drainage tube is useless as a rule. I saw just such a case where the operation was simply for the appendix quite a few years ago, when the fad of simply tying the appendix and cauterizing the end was first instituted. This may work when you use silk for a ligature, but certainly not with catgut. I never tie the appendix myself, I cut it off and then sew muscles to muscle, then cover it with peritonuem, and finally depress and bury it all with Lemberts sutures.

Yours very truly,
J. H. CARSTENS.

Mohawk, Mich., June 18, 1915.

Editor: *The Journal*.

In the June number of the *Journal of the Michigan State Medical Society*, under the heading of "Opinion Solicited," you asked a certain question.

I would offer the following explanation of why the patient's condition became one of extremes so suddenly. In automobile phraseology, is it not more than probable that there was a "blow out" at the seat of operation for removal of the appendix, due to defective ligation of the stump.

This, to some degree, illustrates the advisability of invaginating all stumps when feasible, I am,

Respectfull yours,
N. S. MACDONALD, M.D.

Deaths

Dr. W. M. Carling of Battle Creek died May 30, 1915. Dr. Carling has been a member of the Calhoun County Medical Society since 1911, when he came to this state from Denver.

Dr. D. E. Fuller of Hastings, where he had practiced medicine since 1881, died May 13th. He was graduated from the University of Buffalo in 1878, and has been a member of the Michigan State Medical Society since 1894.

Dr. Croney's Specific for Epilepsy.—This Epilepsy "cure" is sold on the mail-order plan for Dr. James T. Croney of Columbus, Ohio. Examination in the A.M.A. Chemical Laboratory showed it to be a solution containing ammonium bromide and potassium bromide as essential constituents, containing bromide equivalent to 169 grains potassium bromide per dose of two teaspoonsful (2 fluidrams). Like other epilepsy "cures," Croney's Specific for Epilepsy is a bromide mixture and is both worthless and dangerous (*Jour. A.M.A.*, April 17, 1915, p. 1344).

State News Notes

WANTED—Position. Desire to become associated with Surgeon as assistant or as Internist in Office, General or Private Hospital Practice. Graduate A plus college, Hospital experience, five years general practice. Modern and reliable in every way. Age 33. Married. Can furnish best of credentials and will expect same. Address Internist, c-o The Journal.

FOR SALE—Wappler Portable Coil in perfect condition. Bargain. Address Journal.

MICHIGAN STATE BOARD OF REGISTRATION IN MEDICINE.

Notes on Ann Arbor Meeting, June 9, 1915.

Detroit Examination, May 27, 28, 29, 1915.

Candidates for primary examination (1st two years of course)	51
Candidates for final examination (2nd two years of course)	40
Candidates for primary-final examination (4 years' course)	9
Total	100

One candidate, conditioned in Pathology, wrote on that subject.

The following medical colleges were represented:

Detroit College of Medicine and Surgery...	95
Toronto University, Medical Department...	2
Western University, London, Ont.	1
University of Michigan, Med. Dept.	1
University of Illinois, Med. Dept.	1

Total

Ann Arbor Examination, June 8, 9, 10, 1915.

Candidates for primary examination (1st two years of course)	50
Candidates for final examination (2nd two years of course)	22
Candidates for primary-final examination (4 years' course)	38
Total	110

The following medical colleges were represented:

Department of Med. & Surg., Univ. of Mich.	87
Homeopathic College, Univ. of Mich.	16
University of Louisville, Kentucky	1
Detroit College of Medicine and Surgery ..	1
University of Pittsburgh	1
University of Pennsylvania	1
Rush Medical College, N. Y.	1
Georgetown University	1
Eclectic Medical College, Ohio	1

Total

HEARING, RECANCELLATIONS OF LICENSES.

Dr. Wm. L. Baker, Detroit.

Licensed by the board June 12, 1900, and convicted in Recorder's Court, Detroit, Dec. 1, 1914, of unlawfully prescribing cocaine and heroin for other than legal and legitimate therapeutic purposes. Appeared before board to show cause why his license should not be cancelled. The Police Department of

Detroit certified to the good behavior of Dr. Baker since charged and convicted with the offense, and recommended leniency. His case was postponed one year, during which period he is on probation.

Dr. Charles J. Beaver, Mancelona.

Licensed by the board March 22, 1900. Appeared before the board to show cause why his license should not be cancelled, owing to his conviction in the United States Court October 12, 1914, of unlawfully prescribing liquor. It was shown that Dr. Beaver had been convicted upon a legal technicality, and the case against him was consequently dismissed.

Dr. Arden N. Howe, Boyne Falls.

Licensed by the board March 22, 1900. Convicted in the United States Court of prescribing illegally. Case similar to Dr. Beaver's. Case dismissed.

Vladimir Maczulski, Detroit.

Convicted in Recorder's Court, Detroit, April 15, 1915, of fraud and perjury in connection with obtaining a certificate of registration from the board. Also convicted in Albany, N. Y., May, 1914 of practicing medicine without a license. Certificate of Registration revoked.

Dr. John A. McDowell, Detroit.

Licensed in Michigan under the 1883 Medical Act, and re-registered under the 1889 Medical Act, March 22, 1900. Graduate of Rush Medical College, 1886. Convinced in Recorder's Court, Detroit, of violating the Medical Law, by being habitually addicted to the use of morphine and cocaine. Served five months in the Detroit House of Correction. License cancelled.

Dr. Andrew B. Spinney Smyrna.

Registered March 22, 1900, under re-registration clause. Graduate of Western Homeopathic Medical College, Cleveland, O., 1859, also "years of practice." Convicted of illegal advertising in Circuit Court of Ionia County, Nov., 1914. Also waiting trial upon similar charge in Oakland County. Case adjourned to October meeting of the board, pending result of trial upon recent charge.

REGISTRATION UNDER CHIROPODY ACT, WHICH WILL BECOME EFFECTIVE NOVEMBER 25TH, NEXT.

Application blanks in connection with the registration, examination and licensing of the Chiropodists were officially indorsed. Appointment of Chiropody examination committee postponed until the October meeting of the board.

COMMITTEE ON STANDARD AND COLLEGES.

Dr. F. C. Warnshuis of Grand Rapids, appointed to fill the vacancy caused by the death of Dr. Austin W. Alvord, of Battle Creek, succeeds Dr. Alvord as chairman of this most important committee. Dr. Warnshuis' activities in connection with the Editorship of the *State Medical Journal*, which affords unusual opportunities of contact with and knowledge of medical colleges and their standards, will undoubtedly be of great benefit to the board and the profession in the future. This committee has in the past obtained national recognition through its original methods of standards and administration of such standards. It will undoubtedly maintain its reputation through its present chairman.

CONDITIONS.

The following rule was passed covering conditions in medical courses in recognized medical colleges, i. e.

Maximum conditions allowed in one year—one major and one minor, or two minors. Major condition, may be divided into minors, when the major subject is extended in course further than one year. All conditions should be removed prior to advance in succeeding year, and should not be extended beyond January 1st of such year.

Major subjects: Anatomy, Physiology, Chemistry, Pathology, Practice, and Surgery.

Minor subjects: Histology and Embryology, Bacteriology, Preventive Medicine, Medical Jurisprudence, Eye, Ear, Nose and Throat, Obstetrics, Gynecology, and Materia Medica and Therapeutics.

In examination, majors are ten question subjects, and minors are 5 question subjects, and are marked on the scale of one to ten, each question.

The President, Dr. LeFevre, and Chairman, Dr. Warnshuis of the Standard and College Committee, were authorized to investigate the curriculums of Harvard Medical College and the College of Physicians and Surgeons of New York (Columbia University), which have recently undergone some radical changes.

B. D. HARISON, Secretary.

The Upper Peninsular Medical Society will hold its annual meeting August 4 and 5, at the Soo. Dr. J. G. Turner of Houghton is the President and Dr. R. Bennie of the Soo, Secretary. These meetings have always been extremely interesting and profitable. It is sincerely hoped that every physician of the Upper Peninsula will avail himself of the opportunity and not forego these several sessions.

Dr. Angus McLean, of Detroit, Mich. has been appointed Chief Surgeon of the Henry Ford Hospital which will open in about two weeks.

The hospital at the present time has 100 beds and extensions will be made for a 2,000 bed hospital, all of which will be private rooms.

T. G. H. McDonald, formerly with Kuhlman & Co. and later with the Victor Co. died in Grand Rapids May 29th from multiple neuritis. Mr. McDonald had an extended acquaintance among the profession to whom he was familiarly known as "Mac."

Dr. M. L. Holm of Lansing, State Bacteriologist, has not resigned as reported in our last issue. The Doctor will continue in office at Lansing. Dr. A. A. Spoor who was reported as his successor has been tendered the position at the head of the Board of Health laboratory in the upper peninsula.

The laboratory of the State Board of Health in the upper peninsula will be located in the Michigan College of Mines. Quarters have been provided in the Chemistry Building. Dr. A. A. Spoor will be in charge.

The marriage of Dr. Homer Ramsdell and Miss

Charlotte Sweetman, daughter of Dr. J. L. Sweetman of Manistee occurred June 30th, at the home of the bride. Dr. and Mrs. Ramsdell will make their home in Manistee.

At a recent meeting of the Michigan Commandery of the Loyal Legion, held in Detroit, Dr. A. Vander Veen of Grand Haven was elected Commander for the ensuing year.

Dr. Geo. E. Horne of Detroit has located at Entrican, where he has taken over the practice of Dr. A. W. Woodburne.

Mercy Hospital at Muskegon graduated five nurses. Dr. G. L. Le Fevre presented the graduates with their diplomas.

The Battle Creek Sanitarium graduated a class of 47 nurses. Dr. Kellogg presented the diplomas to the nurses.

The Detroit College of Medicine and Surgery graduated a class of 46 at the 47th Annual Commencement held June 1st.

The Medical Department of the University of Michigan graduated a class of 43 at its annual commencement exercises.

Dr. W. T. Dodge of Big Rapids has been appointed local surgeon for the G. R. & I. railroad to to succeed the late Dr. L. S. Griswold.

Dr. H. B. Bucklen of Baraga secured a verdict of no cause for action in a malpractice suit recently instituted against him.

Dr. R. J. E. Oden of Cadillac and Miss Olga Wahlquist of Minneapolis were married June 8 at the home of the bride.

Dr. C. M. Williams, of Alpena, is doing post-graduate work at Ann Arbor.

Dr. A. W. Woodburne of Entrican has located in Hastings.

Dr. G. W. Lowrey has again resumed practice after an extended illness.

Dr. Thomas F. Bray of Reed City sustained serious injuries when his auto was struck by an engine.

Dr. and Mrs. Geo. S. Williams of Muskegon are enjoying an extended vacation in the west.

Dr. E. L. Martin and Dr. C. R. Keller of Maple Rapids have formed a partnership.

Dr. P. M. VandenBerg has been elected city physician of Grand Haven.

A Good Health Week was held in Escanaba during the week of June 27.

Dr. T. P. Pomeroy of Reed City sustained serious injuries when his team ran away.

Dr. and Mrs. W. J. Smith of Cadillac are on a five weeks trip to the Coast.

Dr. H. S. White of McBain is pursuing a three months course at Harvard.

The new Cheboygan Hospital was opened June 1st. Dr. W. R. Stringham is the proprietor.

County Society News

CALHOUN COUNTY

Etiology of Goiter,

Dr. Roy H. Baribeau.

Medical and Surgical Treatment of Goiter,

Dr. A. E. MacGregor.

Preliminary Report of the Goiter Committee,

Dr. Wilfrid Haughey.

GRAND TRAVERSE-LEELANAU

The regular meeting of the Grand Traverse-Leelanau Society was held on Tuesday evening, June 1st, at Doctor Wilhelm's office. The meeting was called to order at 8:30 by the President, Dr. J. F. Slepicka.

Dr. F. P. Lawton presented a patient who had had extensive deep burns of the lower extremities. Following the presentation of the case Dr. Lawton gave a talk on the treatment of burns, calling attention to the difficulties encountered in the care of these cases. A general discussion followed.

Dr. E. B. Minor read a very interesting paper on tuberculous meningitis, and gave a report of a case. A general discussion followed.

Louis N. Yerkes, M.D. of Elk Rapids and Henning V. Hendricks of the Traverse City State Hospital were elected to membership.

The Society will have a picnic for members, their families and friends in July.

W. D. MUELLER, Secretary.

KALAMAZOO COUNTY

Tuesday, May 25, 1915, 9 a. m. at one of the Hospitals.

Surgical Clinic—Harelip and Cleft Palate Cases.

Dr. Truman Brophy, Chicago, Ill.

Luncheon at The Burdick Hotel at 12 noon.

Academy of Medicine Rooms, Public Library Building, 1:30 p. m.

1. Surgery of the Palate,

Dr. Truman Brophy, Chicago, Ill.

Discussion opened by Dr. C. J. Lyons, Jackson.

2. Some Experiences with Surgical Treatment of Carcinoma of the Stomach,

Dr. C. G. Darling, Ann Arbor.

Discussion opened by Dr. A. L. Robinson, Allegan.

May 25th the Academy of Medicine convened in regular session with Dr. Frederick Shillito in the chair.

Dr. Brophy gave a most interesting and graphic clinic at the Borgess Hospital in the morning and a demonstration, by lantern slides, at the Academy

rooms of his methods of dealing with harelip and cleft palate. At a glance one is convinced of his mastery, skill and sincerity. He did four or five operations—two cleft palate (third degree, according to his classification) one harelip, (second degree), two repair operations to overcome serious defects in prior operations in the hands of less skilled, who had repaired the loss of contiguity but left twisted and flattened nose.

One great advance is the use of lead plates to hold the freed soft parts in place, prevent pressure of pulling out of the silver-wire-stay sutures. The use of non-absorbing suture material such as horse-hair for the fine coaptation of the edges of the wound, silver wire for main stay and lead plates made for the maximum of aseptic surgery and minimize possibility of infection. A most excellent step is the use he makes of soft suture material to place the silver wires. This is a great help as any one knows who has tried to sew with silver wire in the mouth. One of the greatest contributions is the elimination of the alveolar lateral incision. This he shows is not only needless but does away with the severing of important blood supply, cutting of the nerve supply and palatal muscles and makes for the preservation of functions of speech and deglutition. It also minimizes possibility of tissue necrosis. Dr. Brophy's handling of the worst deformities—those protruberant premaxillae harelip—is a real revolution and instead of sacrificing incisor teeth and deforming the arch, he preserves the one and conserves the other. Some cases defy detection either in speech or beauty of arch presentation that anything had ever been wrong.

In a word he has added so much and made it so clear that one wonders that it had not before been done. It is made as simple as Columbus' demonstration of standing an egg on its head.

Dr. C. G. Darling of Ann Arbor presented a paper on "Some Experiences with Surgical Treatment of Carcinoma of the Stomach." His paper was concluded by the following remarks: "When the liver is invaded, no operation should be performed unless for relief of the complete obstruction for a short time. When the coeliac glands are enlarged but still a possibility of removal and the liver is apparently free, a gastroenterostomy may be performed to relieve obstruction provided the patient is not too far reduced by starvation and the hemoglobin has not suffered too much.

When you are sure that you are dealing with an ulcer of the pyloric portion that is causing retention a gastroenterostomy is indicated. When in doubt of sure carcinoma remove the diseased portion and repair damages. This repair usually means some form of gastroenterostomy as I will explain later.

Results depend more on the after-treatment than the operation. First, believe in your operation and then have the patient believe in it. The stomach may work at once but do not put it to the test for twenty-four hours. This rule has exceptions. Water is administered per rectum; if for any reason it is not retained you may begin to give it in teaspoonful doses. Beer may be given by mouth and rectum at the same time. The fowler position is maintained for several days. It places the stomach and lessens danger of pneumonia. Morphine should not be used except in extreme cases.

A properly trained patient does not need any medicine; since we stopped using it our patients do better. When a patient dies it is usually due to some fault of technic for the operation can be only as strong as its weakest point. One must watch for hemorrhage or loss of blood supply to a part. Thrombosis from pricking or injuring a vessel with forceps is a greater source of danger than is commonly supposed. Thrombosis and embolism of mesenteric vessels may cause death and should be guarded against with great care.

Cancer of the stomach can sometimes be cured by operation. Many times it may relieve pain and prolong life. It is not yet well understood but better results will come when diagnosis and technic are improved."

On June 8th the regular session of the Kalamazoo Academy was held and the program was opened by report of a "Multiple Thrombi" by Dr. L. V. Rogers of Galesburg.

Cerebral thrombosis, pulmonary infarct on the left and right side of lungs, femoral thrombosis in both lower extremities of which all occurred on one individual were described in detail. The diseases was ushered in by vomiting and diarrhea alternating with constipation, flatulence and discomfort in abdomen. History of ulcer could not be obtained and mesenteric thrombosis was not possible for want of pain. Since the illness diarrhea alternating with constipation continues. Thrombosis in the lower limb frequently follows carcinoma of the stomach.

Causes of thrombosis formation: First, there is an increase of the plasmin in the blood spontaneously coagulable fibrin which is associated with cachectic states. Secondly, there is slowing of the blood stream in degeneration of the heart muscle in cardiac paresis which occurs after severe illness and fever and after some hemorrhage. Thirdly, the condition of the vessel wall, either that it has been injured or is the seat of disease such as atheroma, syphilis, varicosity has a direct relation to cause of the thrombi. These thrombi were metastatic and infective nature though the tendency to pus formation was never present.

Dr. A. W. Hewlett of Ann Arbor treated the subject of "Nitrogenous Retention in Chronic Nephritis" in a very clear, practical manner. The following is a brief report of his remarks.

"It is well known that one of the important functions of the kidney is the elimination of nitrogenous wastes from the body. The amount of such wastes eliminated is determined primarily by the intake of the protein and other nitrogenous food. Determinations of the amount of urea in the urine are therefore without significance in chronic nephritis, except where a considerable amount of urea is added to the food and the rapidity with which the excess is eliminated is determined. Nitrogenous retention is best determined by an examination of the blood. Such determinations can now be performed on small amounts of blood and without great difficulty. Slight retentions are common in chronic nephritis. Marked retentions are rather uncommon. The latter are accompanied by a group of asthenic symptoms and particularly, by muscular and mental weakness and fatigue, by loss of appetite and by anemia. Nitrogenous retention is not the direct cause of uremic convulsions, which according to Foster is due to a

specific poison. Nitrogenous retention bears no constant relation to the amount of albumin in the urine to the height of the blood pressure or the amount of edema. It runs roughly parallel to an inability on the part of the kidneys to excrete test dyes and particularly phenolsulphonephthalein. The main clinical significance of marked nitrogenous retention is the unfavorable prognosis in chronic nephritis. In acute nephritis and in prostatic obstruction the nitrogenous retention even when marked may disappear as the primary disease improves or is removed. In slight retentions the urea content of the blood may be reduced to the normal by restricting the protein intake. In marked retentions such restriction will reduce the urea in the blood but not to the normal limits."

C. B. FULKERSON, Secretary.

ST. CLAIR COUNTY

The regular meeting of the St. Clair County Medical Society was held June 3 at the Hotel Harrington, Port Huron.

The invited guest was Dr. Wm. Donald of Detroit. His paper was on "Irregularities of the Heart."

After dinner, at which eighteen members sat down, the evening was devoted to a social time.

R. K. WHEELER, Secretary.

WAYNE COUNTY

Monday, May 17, 1915 Dr. C. Hollister Judd gave a talk from illustrations and lantern slide pictures of the common abnormalities of obstetrics and covered most of the important problems met by the general practitioner in that work.

Monday, May 24—Surgical Section.

"Some Phases of Appendicitis."

Dr. Hugo O. Pantzer, Indianapolis.

Discussion opened by Drs. Max. Ballin, W. P. Manton, L. J. Hirschman.

Monday, May 31—General Meeting.

"Static Deformities, Emphasizing the Frequency of their Occurrence and the Importance of their Early Recognition."

Dr. Charles Ogilvy, New York.

Discussion opened by Drs. Daniel La Ferte, W. E. Blodgett, Dr. F. C. Kidner.

Book Reviews

THE INTERVERTEBRAL FORAMINA IN MAN. An atlas and text of the anatomy and histology of the human intervertebral foramina, including their contents and adjacent parts, with special reference to the nervous structures. By Harold Swanberg member American Association for the Advancement of Science. Author "The Intervertebral Foramen." With an introductory by Pro. Harris E. Santee Department of Anatomy, Chicago College of Medicine and Surgery. Author "Anatomy of the Brain and Spinal Cord;" etc. Illustrated by 11 original, full-page engravings. Crown

8 Vo. of 95 pages, bound in silk cloth. Price \$1.75. Chicago Scientific Publishing Co., Publisher, 221 South Ashland Boulevard, Chicago, Ill., U. S. A.

This book is an entire new work and presents the morphology of all of the intervertebral foramina and adjacent parts in man.

Actual photomicrographs are shown of the human intervertebral foramen and surrounding tissues. The anterior and posterior nerve roots, spinal ganglion, spinal nerve proper, anterior and posterior primary division of spinal nerve, white and gray rami of the sympathetic and the ganglia of the sympathetic gangliated cord can all be clearly seen, and their relations to fat, fibrous tissue, blood vessels, lymph nodes, bone, etc. noted. The size and shape of the intervertebral foramina in each region is clearly shown and described. The sizes of the intervertebral foramina as compared to the spinal nerves is also given in detail. The boundaries of the intervertebral foramina in each region are given; the thickness of the intervertebral fibro-cartilages throughout the entire column is explained; the complete anatomy of all the arteries and veins which pass through the foramina is given. In fact, everything pertaining to the morphology of the intervertebral foramina, including their contents and adjacent parts, is presented, and this in an unusual clear, concise, and instructive manner.

The importance of an intricate knowledge of these apertures need hardly be emphasized. A tremendous and ever increasing amount of attention is being given to spinal therapeutics. Various theories are being profounded, all of which are based upon some pathologic changes occurring in the intervertebral foramina or adjacent parts. It is not the purpose of this book to argue the case one way or the other but to give the facts as they actually exist. The reader will then be in a better position to draw his own conclusions and can then formulate his opinion concerning the theories of nerve pressure, irritation or other pathologic phenomena occurring in the intervertebral foramina or adjacent tissues as a causative factor in the disease.

This book will be invaluable to you, because it clears up a doubtful field, presenting facts nowhere else to be found in print and which are of estimable value to every progressive, truth-seeking, physician.

THE PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene, University of Pennsylvania. 12mo, 650 pages, with 113 illustrations, 28 in colors. Cloth, \$2.75, net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

While carefully preserving the characteristics of inclusiveness and of brevity, clarity and scientific accuracy of statement, which established the popularity and usefulness of Abbott's Bacteriology in its previous editions, the author has accomplished this revision with such thoroughness that the ninth edition is substantially a new work. The recent remarkable developments of bacteriological science have necessitated so many changes in the text that the author has embraced the opportunity to review the whole subject from the most modern viewpoint.

to include all recent advances of proven value, eliminate all obsolete and unessential material, and to greatly elaborate his work.

Concise statement, clear expression and the elimination of theoretical considerations in favor of essentials constitute this a working manual whose usefulness will impress itself more and more on the practitioner or student as he avails himself of its guidance. Every step in every process is made clear. The details of laboratory equipment and the use and value of apparatus receive careful attention. The minutiae of laboratory technic are presented in complete but not burdensome detail.

Historical notes which are not too profuse, stimulate interest in the study, and aid in the comprehension of the subject by showing the steps in the development of modern Bacteriology. The author's emphasis on the applications of Bacteriology in Etiology and Preventive Medicine is a point of peculiar value. The sections dealing with the physiological functions of bacteria are most enlightening, and the latest knowledge of complement fixation, hemolysis and the reactions of immunity is adequately presented. The diagrammatic illustrations accompanying this section are a substantial aid to its understanding.

This is a simply expressed but thoroughly scientific presentation of the proven and useful in a field where the seeker after information is often confronted by a baffling mass of abstruse and often theoretical details.

DISEASES OF THE DIGESTIVE ORGANS. With Special Reference to their Diagnosis and Treatment. By Charles D. Aaron, Sc.D., M.D., Professor of Gastro-enterology in the Detroit College of Medicine and Surgery; Consulting Gastro-enterologist to Harper Hospital. Octavo, 790 pages. Illustrated with 154 engravings, 48 roentgenograms and 8 colored plates. Cloth, \$6.00, net.

Scientific medicine has achieved some of its most notable recent triumphs in the field covered by Dr. Aaron. Modern research; improved facilities for observation; the development of roentgenographic technic and the perfection of the various tests and reactions have added immensely to our store of useful knowledge. In a work of extraordinary scope and equal value all this material is presented by Dr. Aaron in a form which makes it immediately available. The author's work is notable not less because of the vast amount of material handled than for its clear presentation; his emphasis on diagnosis and treatment and the absolute elimination of abstract theories in favor of the practical proven and useful.

Recognizing the tendency to isolate the consideration of diseases of the digestive organs from the great body of internal medicine Dr. Aaron is at pains to point out the direct and vitally important connection and interdependence of the functions of the digestive tract and of the other organs and between gastro-enterology and all branches of internal medicine.

The diagnosis and treatment of digestive diseases are clearly set forth and to give clarity to the handling of the subject the material and conclusions are presented in accordance with the physiologic path

of the digestive tract beginning with oral diseases and proceeding to the consideration of those of the pharynx esophagus, stomach, liver, gall-bladder, bile ducts, pancreas, small intestine, vermiform appendix, colon, sigmoid flexure, rectum, and anus.

Recent progress in the study of internal secretions; the various tests and reactions; qualitative and quantitative analyses are disclosing the condition of intestinal functions; improved methods in the examination of feces; test meal technic and findings; dietetics; mineral-water therapy; hydro-therapy; mechano-therapeutic agencies; oral sepsis as a pre-dominating factor in the etiology of obscure gastrointestinal disorders; duodenal feeding, and the functions of the liver and pancreas in metabolism receive most enlightening consideration from a distinctly advanced viewpoint. The importance of the roentgen ray in limiting the necessity for exploratory laparotomy and in increasing the exactness of diagnosis is dwelt on in a useful chapter, which embodies the most recent advances in roentgenographic science as applied to this department of medicine.

While the author's viewpoint is that of the internist, and he has emphasized medical treatment, he gives adequate consideration to indications for surgical intervention. The attention afforded the physiology of digestion; methods of examination; the significance of findings; the technic of various treatments; therapeutic agencies and the minute consideration of symptoms, diagnosis and treatment in each disease give to this work an encyclopedic completeness. The author is not only a master of his subject but of its presentation. His work will be equally valuable as a working manual and reference volume for the practitioner or a complete treatise for the specialist.

This volume is bound to meet the wants of many. It is sure to be of valuable aid in reach a diagnosis and then institute the proper treatment. The author's large acquaintanceship in Michigan causes us to feel that his effort will be appreciated by his professional fellows in his home state. We commend the volume unreservedly.

OUTLINES OF INTERNAL MEDICINE. For the Use of Nurses. By Clifford Bailey Farr, A.M., M.D., Instructor in Medicine, University of Pennsylvania; Assistant Visiting Physician, Philadelphia General Hospital; Pathologist to the Presbyterian Hospital. 12mo., 408 pages, illustrated with 71 engravings and 5 plates. Cloth, \$2.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

As a basis for a systematic training school course in Internal Medicine or as a reference volume for the graduate nurse, Dr. Farr's work has been most logically planned and perfected with a discriminating grasp of the requirements and limitations of a nursing text-book.

He has conscientiously avoided the somewhat frequent practice of making a rudimentary medical work masquerade as a nurse's text-book merely by the insertion of a few general observations on nursing. Confining himself strictly to the consideration of Internal Medicine, he presents it with the single purpose of meeting the nurse's needs. In selecting his material, in order to emphasize the practical, he has wisely drawn largely on his per-

sonal experience in hospital work, although he has referred frequently to the most authoritative textbooks for supplementary data.

Believing that an intelligent grasp of the nature of the various diseases, their symptoms and treatment, is essential to the development of nursing efficiency, the author has presented every vital fact in detail but has limited his consideration to essentials and has emphasized those points which will be most useful to his readers. His work is at once comprehensive, readily understood and stimulating to a full conception of all that is comprised in the term "Internal Medicine." The nurse who conscientiously studies this volume can hardly fail to acquire a useful appreciation of the significance of symptoms, of the purpose and technic of treatment and of the nature and causation of the various diseases.

The plan of the work, while novel, is most logical, and from a didactic standpoint presents many advantages. It is divided into ten "Parts," eight dealing with diseases of the various systems and two with harmful agencies (Physical, chemical and bacterial) invading the body from without. In each "Part" general considerations are first taken up, to be followed by sketches of the more important diseases, including briefly their etiology, and in more extended detail their characteristics, symptoms and prognosis, with frequent suggestions for emergency procedure. In appropriate sections much information on dietics of special and general value is presented. The sections dealing with infectious diseases are peculiarly useful both from the logical grouping of topics and the extended consideration of prophylaxis and from the clear insight afforded into serum and vaccine therapy, infection and immunity, and the application of the principles of immunology in diagnosis. A useful section gives in detail the relative frequency of diseases and their relative mortality.

Realizing that an understanding of technical terms is of prime importance, the author makes no effort to avoid their use, but is at pains to supply clear definitions and explanations. While the consideration of every topic is ample and suggests no abridgment, the author's purpose is plainly to develop the student as a well equipped nurse and not as an internist.

Miscellany

If you knew a house was on fire and you failed to report it you would expect to be regarded as an enemy of your city. You would be just as much an enemy if you failed to report a known case of leprosy or tuberculosis. So declare our state laws. The United States Public Health Service says: "No health department, state or local, can effectively prevent or control disease without knowledge when, where, and under what conditions cases are occurring.

While the intent of the laws is clear—information and protection—it is a fact that until recently

many physicians did not report all cases of tuberculosis of which they knew. One class of men simply were not up-to-date and could not make diagnosis so as to satisfy themselves. When the average man can detect the disease it is too far advanced for effective help. Another class of physicians still believe it is not wise to tell the patient the truth, lest he be discouraged about himself. When consumption was supposed to be incurable there may have been more excuse for such an attitude than there is now.

It is to the doctor's advantage, the patient's advantage and the advantage of society for the truth to be known. The doctor who withholds the truth will be found out later and so lose his reputation for scientific ability. The patient should know so that he may begin the cure. His family should know in order to save themselves from general infection. And the community should know because the spread of the disease must be stopped at once.

With some exceptions still lingering Michigan physicians generally are reporting cases of tuberculosis to the authorities. They should all avoid the extremes of being alarmists and concealing the grim facts. Scientific truth is the only course. And public sentiment must back up this course, so that the physician who makes prompt reports shall be regarded as a benefactor rather than a cause of disagreeable annoyance. The sooner the fire department knows where the fire is, the sooner the fire can be put out.—G. R. Press.

THE ABBOTT ALKALOIDAL COMPANY CHANGES ITS NAME.

The Abbott Alkaloidal Company has issued the following statement:

Owing to the rapid expansion and broad generalization of its business as manufacturing and importing chemists, The Abbott Alkaloidal Company has deemed it expedient to change its incorporate name to The Abbott Laboratories, and has done so. No change in personnel or policies. Our business is to serve the professions, through the general channels of trade, or direct (at the most convenient point) as best serves their convenience. Price list on request.

For a number of years, this company has been broadening out and enlarging the scope of its activities. As most readers of this *Journal* will remember, some four or five years ago it entered the biologic field and now puts out a full line of serums, antitoxins, vaccines, and similar products, both for human and veterinary practice. Also, it is engaged in the manufacture of pure chemicals and is constantly adding to its already large line of pharmaceutical products, many of which are not distinctively alkaloidal.

It is only fitting and proper, therefore, that a name should be adopted, which is broad enough to cover all the activities of this progressive, up-to-date American enterprise.